



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site:</b>	S25-T1N-R66W (SAM)	<b>North Reference:</b>	Grid
<b>Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #2		

<b>Project</b>	DJ BASIN		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		S25-T1N-R66W (SAM)			
Site Position:		Northing:	1,250,656.77 usft	Latitude:	40.018895
From:	Lat/Long	Easting:	3,214,576.98 usft	Longitude:	-104.733852
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.50 °

Well	SAM 3I-25H-M166					
Well Position	+N/-S	0.00 usft	Northing:	1,250,576.61 usft	Latitude:	40.018675
	+E/-W	0.00 usft	Easting:	3,214,576.83 usft	Longitude:	-104.733855
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	5,086.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	HDGM	11/17/2016	8.32	66.47	52,248

<b>Design</b>	PLAN #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	89.42

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,056.01	5.12	233.38	1,055.67	-6.82	-9.18	2.00	2.00	0.00	233.38	
4,759.45	5.12	233.38	4,744.33	-203.96	-274.45	0.00	0.00	0.00	0.00	
5,015.46	0.00	0.00	5,000.00	-210.78	-283.63	2.00	-2.00	0.00	180.00	
6,709.26	0.00	0.00	6,693.80	-210.78	-283.63	0.00	0.00	0.00	0.00	
7,834.26	90.00	89.42	7,410.00	-203.50	432.53	8.00	8.00	0.00	89.42	
11,906.34	90.00	89.42	7,410.00	-162.11	4,504.40	0.00	0.00	0.00	0.00	SAM 3I-25H PBHL

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<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site:</b>	S25-T1N-R66W (SAM)	<b>North Reference:</b>	Grid
<b>Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #2		

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	KOP @ 800'
900.00	2.00	233.38	899.98	-1.04	-1.40	-1.41	2.00	2.00	
1,000.00	4.00	233.38	999.84	-4.16	-5.60	-5.64	2.00	2.00	
1,056.01	5.12	233.38	1,055.67	-6.82	-9.18	-9.24	2.00	2.00	EOB; INC=5.12°
1,100.00	5.12	233.38	1,099.48	-9.16	-12.33	-12.42	0.00	0.00	
1,200.00	5.12	233.38	1,199.08	-14.48	-19.49	-19.63	0.00	0.00	
1,300.00	5.12	233.38	1,298.69	-19.81	-26.65	-26.85	0.00	0.00	
1,400.00	5.12	233.38	1,398.29	-25.13	-33.82	-34.07	0.00	0.00	
1,500.00	5.12	233.38	1,497.89	-30.45	-40.98	-41.28	0.00	0.00	
1,600.00	5.12	233.38	1,597.49	-35.78	-48.14	-48.50	0.00	0.00	
1,700.00	5.12	233.38	1,697.09	-41.10	-55.30	-55.72	0.00	0.00	
1,800.00	5.12	233.38	1,796.69	-46.42	-62.47	-62.93	0.00	0.00	
1,900.00	5.12	233.38	1,896.29	-51.75	-69.63	-70.15	0.00	0.00	
2,000.00	5.12	233.38	1,995.89	-57.07	-76.79	-77.37	0.00	0.00	
2,100.00	5.12	233.38	2,095.49	-62.39	-83.96	-84.58	0.00	0.00	
2,200.00	5.12	233.38	2,195.09	-67.72	-91.12	-91.80	0.00	0.00	
2,300.00	5.12	233.38	2,294.70	-73.04	-98.28	-99.02	0.00	0.00	
2,400.00	5.12	233.38	2,394.30	-78.36	-105.45	-106.23	0.00	0.00	
2,500.00	5.12	233.38	2,493.90	-83.69	-112.61	-113.45	0.00	0.00	
2,600.00	5.12	233.38	2,593.50	-89.01	-119.77	-120.67	0.00	0.00	
2,700.00	5.12	233.38	2,693.10	-94.33	-126.94	-127.88	0.00	0.00	
2,800.00	5.12	233.38	2,792.70	-99.66	-134.10	-135.10	0.00	0.00	
2,900.00	5.12	233.38	2,892.30	-104.98	-141.26	-142.32	0.00	0.00	
3,000.00	5.12	233.38	2,991.90	-110.30	-148.42	-149.53	0.00	0.00	
3,100.00	5.12	233.38	3,091.50	-115.63	-155.59	-156.75	0.00	0.00	
3,200.00	5.12	233.38	3,191.10	-120.95	-162.75	-163.97	0.00	0.00	
3,300.00	5.12	233.38	3,290.71	-126.27	-169.91	-171.18	0.00	0.00	
3,400.00	5.12	233.38	3,390.31	-131.59	-177.08	-178.40	0.00	0.00	
3,500.00	5.12	233.38	3,489.91	-136.92	-184.24	-185.62	0.00	0.00	
3,600.00	5.12	233.38	3,589.51	-142.24	-191.40	-192.83	0.00	0.00	
3,700.00	5.12	233.38	3,689.11	-147.56	-198.57	-200.05	0.00	0.00	
3,800.00	5.12	233.38	3,788.71	-152.89	-205.73	-207.27	0.00	0.00	
3,900.00	5.12	233.38	3,888.31	-158.21	-212.89	-214.48	0.00	0.00	
4,000.00	5.12	233.38	3,987.91	-163.53	-220.05	-221.70	0.00	0.00	
4,100.00	5.12	233.38	4,087.51	-168.86	-227.22	-228.92	0.00	0.00	
4,200.00	5.12	233.38	4,187.11	-174.18	-234.38	-236.13	0.00	0.00	
4,300.00	5.12	233.38	4,286.71	-179.50	-241.54	-243.35	0.00	0.00	
4,400.00	5.12	233.38	4,386.32	-184.83	-248.71	-250.57	0.00	0.00	
4,500.00	5.12	233.38	4,485.92	-190.15	-255.87	-257.78	0.00	0.00	
4,600.00	5.12	233.38	4,585.52	-195.47	-263.03	-265.00	0.00	0.00	
4,700.00	5.12	233.38	4,685.12	-200.80	-270.20	-272.22	0.00	0.00	
4,759.45	5.12	233.38	4,744.33	-203.96	-274.45	-276.51	0.00	0.00	Start Drop -2.00
4,800.00	4.31	233.38	4,784.74	-205.95	-277.13	-279.20	2.00	-2.00	
4,900.00	2.31	233.38	4,884.57	-209.39	-281.76	-283.87	2.00	-2.00	

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<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site:</b>	S25-T1N-R66W (SAM)	<b>North Reference:</b>	Grid
<b>Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #2		

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,000.00	0.31	233.38	4,984.54	-210.76	-283.60	-285.72	2.00	-2.00	
5,015.46	0.00	0.00	5,000.00	-210.78	-283.63	-285.75	2.00	-2.00	EOD; INC=0°
5,100.00	0.00	0.00	5,084.54	-210.78	-283.63	-285.75	0.00	0.00	
5,200.00	0.00	0.00	5,184.54	-210.78	-283.63	-285.75	0.00	0.00	
5,300.00	0.00	0.00	5,284.54	-210.78	-283.63	-285.75	0.00	0.00	
5,400.00	0.00	0.00	5,384.54	-210.78	-283.63	-285.75	0.00	0.00	
5,500.00	0.00	0.00	5,484.54	-210.78	-283.63	-285.75	0.00	0.00	
5,600.00	0.00	0.00	5,584.54	-210.78	-283.63	-285.75	0.00	0.00	
5,700.00	0.00	0.00	5,684.54	-210.78	-283.63	-285.75	0.00	0.00	
5,800.00	0.00	0.00	5,784.54	-210.78	-283.63	-285.75	0.00	0.00	
5,900.00	0.00	0.00	5,884.54	-210.78	-283.63	-285.75	0.00	0.00	
6,000.00	0.00	0.00	5,984.54	-210.78	-283.63	-285.75	0.00	0.00	
6,100.00	0.00	0.00	6,084.54	-210.78	-283.63	-285.75	0.00	0.00	
6,200.00	0.00	0.00	6,184.54	-210.78	-283.63	-285.75	0.00	0.00	
6,300.00	0.00	0.00	6,284.54	-210.78	-283.63	-285.75	0.00	0.00	
6,400.00	0.00	0.00	6,384.54	-210.78	-283.63	-285.75	0.00	0.00	
6,500.00	0.00	0.00	6,484.54	-210.78	-283.63	-285.75	0.00	0.00	
6,600.00	0.00	0.00	6,584.54	-210.78	-283.63	-285.75	0.00	0.00	
6,700.00	0.00	0.00	6,684.54	-210.78	-283.63	-285.75	0.00	0.00	
6,709.26	0.00	0.00	6,693.80	-210.78	-283.63	-285.75	0.00	0.00	Start Build 8.00
6,800.00	7.26	89.42	6,784.30	-210.72	-277.89	-280.01	8.00	8.00	
6,900.00	15.26	89.42	6,882.29	-210.52	-258.38	-260.50	8.00	8.00	
7,000.00	23.26	89.42	6,976.62	-210.19	-225.43	-227.54	8.00	8.00	
7,100.00	31.26	89.42	7,065.44	-209.72	-179.66	-181.78	8.00	8.00	
7,200.00	39.26	89.42	7,147.03	-209.14	-121.99	-124.10	8.00	8.00	
7,300.00	47.26	89.42	7,219.80	-208.44	-53.52	-55.62	8.00	8.00	
7,400.00	55.26	89.42	7,282.33	-207.65	24.41	22.31	8.00	8.00	
7,500.00	63.26	89.42	7,333.40	-206.78	110.29	108.19	8.00	8.00	
7,600.00	71.26	89.42	7,372.03	-205.84	202.44	200.34	8.00	8.00	
7,700.00	79.26	89.42	7,397.45	-204.86	299.06	296.97	8.00	8.00	
7,800.00	87.26	89.42	7,409.18	-203.85	398.28	396.20	8.00	8.00	
7,834.26	90.00	89.42	7,410.00	-203.50	432.53	430.45	8.00	8.00	LP @ 7410' TVD; 90°
7,900.00	90.00	89.42	7,410.00	-202.83	498.27	496.19	0.00	0.00	
8,000.00	90.00	89.42	7,410.00	-201.82	598.26	596.19	0.00	0.00	
8,100.00	90.00	89.42	7,410.00	-200.80	698.25	696.19	0.00	0.00	
8,200.00	90.00	89.42	7,410.00	-199.78	798.25	796.19	0.00	0.00	
8,300.00	90.00	89.42	7,410.00	-198.77	898.24	896.19	0.00	0.00	
8,400.00	90.00	89.42	7,410.00	-197.75	998.24	996.19	0.00	0.00	
8,500.00	90.00	89.42	7,410.00	-196.73	1,098.23	1,096.19	0.00	0.00	
8,600.00	90.00	89.42	7,410.00	-195.72	1,198.23	1,196.19	0.00	0.00	
8,700.00	90.00	89.42	7,410.00	-194.70	1,298.22	1,296.19	0.00	0.00	
8,800.00	90.00	89.42	7,410.00	-193.68	1,398.22	1,396.19	0.00	0.00	
8,900.00	90.00	89.42	7,410.00	-192.67	1,498.21	1,496.19	0.00	0.00	
9,000.00	90.00	89.42	7,410.00	-191.65	1,598.21	1,596.19	0.00	0.00	
9,100.00	90.00	89.42	7,410.00	-190.64	1,698.20	1,696.19	0.00	0.00	
9,200.00	90.00	89.42	7,410.00	-189.62	1,798.20	1,796.19	0.00	0.00	
9,300.00	90.00	89.42	7,410.00	-188.60	1,898.19	1,896.19	0.00	0.00	
9,400.00	90.00	89.42	7,410.00	-187.59	1,998.19	1,996.19	0.00	0.00	
9,500.00	90.00	89.42	7,410.00	-186.57	2,098.18	2,096.19	0.00	0.00	
9,600.00	90.00	89.42	7,410.00	-185.55	2,198.18	2,196.19	0.00	0.00	
9,700.00	90.00	89.42	7,410.00	-184.54	2,298.17	2,296.19	0.00	0.00	
9,800.00	90.00	89.42	7,410.00	-183.52	2,398.17	2,396.19	0.00	0.00	

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<b>Project:</b>	DJ BASIN	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site:</b>	S25-T1N-R66W (SAM)	<b>North Reference:</b>	Grid
<b>Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #2		

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,900.00	90.00	89.42	7,410.00	-182.50	2,498.16	2,496.19	0.00	0.00	
10,000.00	90.00	89.42	7,410.00	-181.49	2,598.16	2,596.19	0.00	0.00	
10,100.00	90.00	89.42	7,410.00	-180.47	2,698.15	2,696.19	0.00	0.00	
10,200.00	90.00	89.42	7,410.00	-179.46	2,798.15	2,796.19	0.00	0.00	
10,300.00	90.00	89.42	7,410.00	-178.44	2,898.14	2,896.19	0.00	0.00	
10,400.00	90.00	89.42	7,410.00	-177.42	2,998.14	2,996.19	0.00	0.00	
10,500.00	90.00	89.42	7,410.00	-176.41	3,098.13	3,096.19	0.00	0.00	
10,600.00	90.00	89.42	7,410.00	-175.39	3,198.13	3,196.19	0.00	0.00	
10,700.00	90.00	89.42	7,410.00	-174.37	3,298.12	3,296.19	0.00	0.00	
10,800.00	90.00	89.42	7,410.00	-173.36	3,398.12	3,396.19	0.00	0.00	
10,900.00	90.00	89.42	7,410.00	-172.34	3,498.11	3,496.19	0.00	0.00	
11,000.00	90.00	89.42	7,410.00	-171.32	3,598.10	3,596.19	0.00	0.00	
11,100.00	90.00	89.42	7,410.00	-170.31	3,698.10	3,696.19	0.00	0.00	
11,200.00	90.00	89.42	7,410.00	-169.29	3,798.09	3,796.19	0.00	0.00	
11,300.00	90.00	89.42	7,410.00	-168.27	3,898.09	3,896.19	0.00	0.00	
11,400.00	90.00	89.42	7,410.00	-167.26	3,998.08	3,996.19	0.00	0.00	
11,500.00	90.00	89.42	7,410.00	-166.24	4,098.08	4,096.19	0.00	0.00	
11,600.00	90.00	89.42	7,410.00	-165.23	4,198.07	4,196.19	0.00	0.00	
11,700.00	90.00	89.42	7,410.00	-164.21	4,298.07	4,296.19	0.00	0.00	
11,800.00	90.00	89.42	7,410.00	-163.19	4,398.06	4,396.19	0.00	0.00	
11,900.00	90.00	89.42	7,410.00	-162.18	4,498.06	4,496.19	0.00	0.00	
11,906.34	90.00	89.42	7,410.00	-162.11	4,504.40	4,502.53	0.00	0.00	TD at 11906.34

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SAM 3I-25H TPZ	0.00	0.00	7,360.74	-206.15	171.80	1,250,370.46	3,214,748.62	40.018105	-104.733248
- plan misses target center by 0.10usft at 7567.35usft MD (7360.84 TVD, -206.15 N, 171.77 E)									
- Point									
SAM 3I-25H PBHL	0.00	0.00	7,410.00	-162.11	4,504.40	1,250,414.50	3,219,081.23	40.018122	-104.717778
- plan hits target center									
- Point									

### Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
800.00	800.00	0.00	0.00	KOP @ 800'
1,056.01	1,055.67	-6.82	-9.18	EOB; INC=5.12°
4,759.45	4,744.33	-203.96	-274.45	Start Drop -2.00
5,015.46	5,000.00	-210.78	-283.63	EOD; INC=0°
6,709.26	6,693.80	-210.78	-283.63	Start Build 8.00
7,834.26	7,410.00	-203.50	432.53	LP @ 7410' TVD; 90°
11,906.34	7,410.00	-162.11	4,504.40	TD at 11906.34

# **Crestone Peak Resources**

**DJ BASIN**

**S25-T1N-R66W (SAM)**

**SAM 3I-25H-M166**

**OH**

**PLAN #2**

## **Anticollision Report**

**28 November, 2016**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PLAN #2		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,500.00usft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	11/28/2016		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	11,906.34	PLAN #2 (OH)	MWD+HDGM	OWSG MWD + HDGM

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation	Warning
	Measured Depth (usft)	Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
S25-T1N-R66W (SAM)						
Bare Spaces 11-36 (EXISTING) - CPR WELL - NO SURV						Out of range
Beierle 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Beierle 1-A (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	6,731.09	6,892.59	1,088.95	1,043.41	23.910	CC, ES
Beierle 2 (EXISTING) - CPR WELL - SURVEYS	6,900.00	7,062.24	1,101.84	1,055.40	23.726	SF
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,290.02	11,900.35	361.55	283.11	4.609	CC
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,300.00	11,900.33	361.75	281.83	4.526	ES
Beierle KE 26-361HN - GWOG WELL - GWOG WELL	7,400.00	11,900.19	385.85	294.07	4.204	SF
Gilmore 1-30 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lehl 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lochbuie 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Lochbuie 21-31 (EXISTING) - CPR WELL - GYRO						Out of range
Lochbuie 2A-31H-D165 (EXISTING) - CPR WELL - SUR	11,906.34	7,001.00	1,451.53	1,310.16	10.268	CC, ES, SF
Lochbuie 2B-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2C-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2D-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2E-31H-D165 (EXISTING) - CPR WELL - SUR	11,906.34	7,001.00	1,466.05	1,325.92	10.462	CC, ES, SF
Lochbuie 2F-31H-D165 (PLAN) - CPR WELL - PLAN ON						Out of range
Lochbuie 2G-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lochbuie 2H-31H-D165 (EXISTING) - CPR WELL - SUR						Out of range
Lutz 1-A (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	504.51	465.51	1,334.78	1,332.68	635.703	CC, ES
Sam 1 (EXISTING) - CPR WELL - NO SURVEYS	1,100.00	500.00	1,459.97	1,454.73	278.242	SF
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	7,654.53	7,615.00	914.13	859.32	16.677	CC, ES
Sam 13-25 (EXISTING) - CPR WELL - SURVEYS	7,700.00	7,625.83	915.27	860.26	16.638	SF
SAM 3A-25H-M166 - OH - PLAN #1	200.00	200.00	80.15	79.16	80.717	CC, ES
SAM 3A-25H-M166 - OH - PLAN #1	11,906.34	12,011.63	1,434.87	1,132.98	4.753	SF
SAM 3B-25H-M166 - OH - PLAN #1	300.00	300.00	69.94	68.23	40.902	CC, ES
SAM 3B-25H-M166 - OH - PLAN #1	11,906.34	12,163.02	1,310.79	1,011.56	4.380	SF
SAM 3C-25H-M166 - OH - PLAN #1	400.00	400.00	60.11	57.69	24.770	CC, ES
SAM 3C-25H-M166 - OH - PLAN #1	11,906.34	11,906.51	1,192.13	890.72	3.955	SF
SAM 3D-25H-M166 - OH - PLAN #1	500.00	500.00	49.92	46.77	15.878	CC, ES
SAM 3D-25H-M166 - OH - PLAN #1	11,906.34	11,944.73	970.06	668.33	3.215	SF
SAM 3E-25H-M166 - OH - PLAN #1	600.00	600.00	40.08	36.22	10.382	CC, ES
SAM 3E-25H-M166 - OH - PLAN #1	11,906.34	11,844.33	678.62	378.44	2.261	SF
SAM 3F-25H-M166 - OH - PLAN #1	800.00	800.00	29.88	24.58	5.643	CC, ES
SAM 3F-25H-M166 - OH - PLAN #1	11,906.34	11,906.25	524.92	223.29	1.740	SF
SAM 3G-25H-M166 - OH - PLAN #1	800.00	800.00	20.05	14.75	3.786	CC, ES
SAM 3G-25H-M166 - OH - PLAN #1	11,906.34	11,825.79	322.25	28.08	1.095	Level 2, SF
SAM 3H-25H-M166 - OH - PLAN #1	800.00	800.00	9.85	4.55	1.860	CC, ES
SAM 3H-25H-M166 - OH - PLAN #1	11,906.34	12,069.34	199.77	29.17	1.171	Level 2, SF
SAM 3J-25H-M166 - OH - PLAN #1	700.00	700.00	9.83	5.25	2.148	CC
SAM 3J-25H-M166 - OH - PLAN #1	11,906.34	11,845.06	235.76	-52.64	0.817	Level 1, ES, SF
SAM 3K-25H-M166 - OH - PLAN #1	600.00	600.00	20.03	16.17	5.187	CC, ES
SAM 3K-25H-M166 - OH - PLAN #1	11,906.34	11,936.55	454.98	154.09	1.512	SF
SAM 3L-25H-M166 - OH - PLAN #1	500.00	500.00	29.87	26.73	9.502	CC, ES
SAM 3L-25H-M166 - OH - PLAN #1	11,906.34	11,886.52	658.70	358.77	2.196	SF
SAM 3M-25H-M166 - OH - PLAN #1	400.00	400.00	40.06	37.64	16.508	CC, ES
SAM 3M-25H-M166 - OH - PLAN #1	11,906.34	11,975.04	900.13	598.61	2.985	SF
SAM 3N-25H-M166 - OH - PLAN #1	300.00	300.00	49.90	48.19	29.182	CC, ES
SAM 3N-25H-M166 - OH - PLAN #1	11,906.34	12,155.71	1,014.29	717.14	3.413	SF
SAM 3O-25H-M166 - OH - PLAN #1	200.00	200.00	60.10	59.11	60.529	CC, ES
SAM 3O-25H-M166 - OH - PLAN #1	11,906.34	11,932.12	1,102.34	801.20	3.661	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S25-T1N-R66W (SAM)						
State 7-36 CG (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Templin 1 (EXISTING) - CPR WELL - NO SURVEYS						Out of range
Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS	11,451.32	7,331.00	222.95	78.26	1.541	CC, ES, SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - Beierle 2 (EXISTING) - CPR WELL - SURVEYS												Offset Site Error: 0.00 usft	
Survey Program: 1357-ISCWSA MWD												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
3,200.00	3,191.10	3,577.10	3,515.49	11.50	9.82	103.78	1,211.32	-753.14	1,493.55	1,474.13	19.42	76.914	
3,300.00	3,290.71	3,682.58	3,615.56	11.88	10.41	103.18	1,180.63	-766.20	1,473.44	1,453.16	20.28	72.640	
3,400.00	3,390.31	3,789.28	3,716.57	12.26	11.04	102.55	1,148.87	-779.32	1,452.82	1,431.64	21.18	68.595	
3,500.00	3,489.91	3,885.58	3,807.58	12.64	11.61	101.94	1,119.72	-791.21	1,431.92	1,409.87	22.05	64.946	
3,600.00	3,589.51	3,980.94	3,897.89	13.03	12.15	101.35	1,091.35	-802.75	1,411.54	1,388.63	22.91	61.610	
3,700.00	3,689.11	4,085.99	3,997.22	13.41	12.77	100.67	1,059.57	-815.39	1,390.85	1,367.02	23.83	58.373	
3,800.00	3,788.71	4,176.70	4,082.78	13.79	13.32	100.03	1,031.71	-826.83	1,370.14	1,345.42	24.72	55.427	
3,900.00	3,888.31	4,266.68	4,167.77	14.17	13.85	99.38	1,004.65	-838.66	1,350.41	1,324.80	25.61	52.727	
4,000.00	3,987.91	4,368.24	4,263.78	14.55	14.43	98.64	974.12	-851.57	1,330.73	1,304.19	26.54	50.141	
4,100.00	4,087.51	4,469.98	4,360.11	14.93	15.02	97.91	943.70	-863.54	1,310.97	1,283.49	27.47	47.715	
4,200.00	4,187.11	4,593.93	4,477.07	15.32	15.79	96.97	905.28	-878.02	1,290.48	1,261.98	28.50	45.279	
4,300.00	4,286.71	4,705.19	4,581.52	15.70	16.51	96.09	868.86	-889.97	1,268.15	1,238.64	29.51	42.979	
4,400.00	4,386.32	4,779.52	4,651.36	16.08	16.96	95.48	844.76	-898.05	1,246.41	1,216.00	30.41	40.982	
4,500.00	4,485.92	4,856.61	4,724.18	16.46	17.40	94.85	821.03	-906.85	1,226.57	1,195.26	31.31	39.171	
4,600.00	4,585.52	4,942.90	4,806.04	16.84	17.88	94.15	795.67	-916.90	1,208.25	1,176.02	32.23	37.489	
4,700.00	4,685.12	5,033.16	4,891.94	17.23	18.37	93.44	769.86	-926.97	1,190.61	1,157.46	33.15	35.914	
4,759.45	4,744.33	5,084.01	4,940.53	17.45	18.64	93.05	755.87	-932.39	1,180.61	1,146.92	33.69	35.045	
4,800.00	4,784.74	5,116.93	4,972.07	17.61	18.81	92.67	747.07	-935.83	1,174.04	1,139.99	34.04	34.486	
4,900.00	4,884.57	5,186.00	5,038.45	17.98	19.16	91.77	729.40	-943.00	1,158.95	1,124.07	34.89	33.221	
5,000.00	4,984.54	5,282.00	5,131.22	18.33	19.62	90.54	706.88	-953.08	1,145.72	1,109.93	35.79	32.016	
5,015.46	5,000.00	5,282.00	5,131.22	18.38	19.62	-36.11	706.88	-953.08	1,143.80	1,107.92	35.88	31.878	
5,100.00	5,084.54	5,349.92	5,197.25	18.65	19.91	-36.83	692.62	-960.08	1,134.50	1,097.94	36.56	31.030	
5,200.00	5,184.54	5,431.36	5,276.91	18.98	20.24	-37.60	677.50	-967.68	1,125.19	1,087.86	37.33	30.140	
5,300.00	5,284.54	5,514.35	5,358.60	19.30	20.54	-38.28	664.41	-974.24	1,117.51	1,079.45	38.06	29.363	
5,400.00	5,384.54	5,597.71	5,441.04	19.63	20.81	-38.86	653.45	-979.86	1,111.38	1,072.64	38.74	28.690	
5,500.00	5,484.54	5,681.33	5,524.01	19.95	21.05	-39.36	644.35	-985.04	1,106.80	1,067.42	39.38	28.105	
5,600.00	5,584.54	5,767.24	5,609.38	20.28	21.27	-39.83	636.45	-990.35	1,103.64	1,063.64	40.00	27.589	
5,700.00	5,684.54	5,858.00	5,699.80	20.61	21.48	-40.23	630.08	-994.88	1,101.48	1,060.88	40.60	27.133	
5,800.00	5,784.54	5,945.68	5,787.33	20.94	21.64	-40.48	626.15	-997.91	1,100.31	1,059.19	41.12	26.756	
5,900.00	5,884.54	6,043.98	5,885.60	21.27	21.78	-40.61	624.18	-999.62	1,099.91	1,058.30	41.62	26.428	
6,000.00	5,984.54	6,146.57	5,988.18	21.60	21.90	-40.64	623.47	-999.69	1,099.44	1,057.36	42.08	26.126	
6,100.00	6,084.54	6,250.06	6,091.67	21.94	22.02	-40.67	622.48	-999.65	1,098.68	1,056.13	42.55	25.821	
6,200.00	6,184.54	6,354.21	6,195.81	22.27	22.15	-40.70	621.21	-999.30	1,097.54	1,054.52	43.02	25.513	
6,300.00	6,284.54	6,455.19	6,296.78	22.60	22.28	-40.72	619.92	-998.74	1,096.21	1,052.72	43.48	25.209	
6,400.00	6,384.54	6,557.31	6,398.89	22.94	22.42	-40.74	618.54	-998.01	1,094.72	1,050.77	43.95	24.906	
6,500.00	6,484.54	6,659.09	6,500.65	23.27	22.55	-40.76	617.01	-997.17	1,093.04	1,048.62	44.42	24.605	
6,600.00	6,584.54	6,760.18	6,601.73	23.61	22.69	-40.80	615.16	-996.53	1,091.24	1,046.34	44.90	24.302	
6,709.26	6,693.80	6,870.56	6,712.08	23.98	22.85	-40.87	612.70	-996.17	1,089.16	1,043.73	45.44	23.971	
6,731.09	6,715.63	6,892.59	6,734.10	24.05	22.88	-130.33	612.16	-996.12	1,088.95	1,043.41	45.54	23.910 CC, ES	
6,750.00	6,734.52	6,911.66	6,753.17	24.11	22.91	-130.37	611.69	-996.10	1,089.11	1,043.47	45.64	23.863	
6,800.00	6,784.30	6,961.91	6,803.40	24.27	22.99	-130.48	610.39	-996.05	1,091.09	1,045.19	45.90	23.773	
6,850.00	6,833.64	7,011.77	6,853.24	24.42	23.06	-130.58	609.03	-996.06	1,095.33	1,049.17	46.16	23.729	
6,900.00	6,882.29	7,062.24	6,903.69	24.57	23.15	-130.70	607.56	-996.09	1,101.84	1,055.40	46.44	23.726 SF	
6,950.00	6,930.03	7,111.75	6,953.18	24.71	23.23	-130.80	606.00	-996.12	1,110.63	1,063.91	46.72	23.770	
7,000.00	6,976.62	7,160.06	7,001.45	24.85	23.31	-130.86	604.37	-996.15	1,121.74	1,074.72	47.01	23.860	
7,050.00	7,021.83	7,206.76	7,048.12	24.98	23.39	-130.87	602.70	-996.18	1,135.20	1,087.90	47.31	23.997	
7,100.00	7,065.44	7,250.72	7,092.05	25.12	23.46	-130.77	601.05	-996.24	1,151.09	1,103.49	47.60	24.181	
7,150.00	7,107.25	7,292.79	7,134.09	25.26	23.54	-130.57	599.40	-996.34	1,169.45	1,121.54	47.90	24.413	
7,200.00	7,147.03	7,332.76	7,174.03	25.41	23.61	-130.21	597.78	-996.47	1,190.27	1,142.07	48.20	24.694	
7,250.00	7,184.61	7,370.43	7,211.66	25.59	23.68	-129.68	596.20	-996.63	1,213.54	1,165.05	48.50	25.023	
7,300.00	7,219.80	7,406.41	7,247.61	25.79	23.74	-128.97	594.66	-996.80	1,239.23	1,190.44	48.79	25.399	
7,350.00	7,252.42	7,441.21	7,282.38	26.05	23.80	-128.04	593.18	-996.88	1,267.24	1,218.16	49.08	25.821	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													S25-T1N-R66W (SAM) - Beierle 2 (EXISTING) - CPR WELL - SURVEYS		Offset Site Error:		0.00 usft
Survey Program:													1357-ISCWSA MWD		Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis				Distance						Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor					
7,400.00	7,282.33	7,473.34	7,314.49	26.35	23.86	-126.82	591.84	-996.86	1,297.47	1,248.10	49.36	26.284					
7,450.00	7,309.37	7,502.65	7,343.77	26.72	23.91	-125.25	590.65	-996.76	1,329.82	1,280.18	49.64	26.788					
7,500.00	7,333.40	7,528.96	7,370.06	27.16	23.96	-123.27	589.59	-996.60	1,364.17	1,314.26	49.91	27.330					
7,550.00	7,354.32	7,552.12	7,393.19	27.66	24.00	-120.80	588.68	-996.41	1,400.39	1,350.21	50.18	27.907					
7,600.00	7,372.03	7,571.98	7,413.04	28.24	24.04	-117.76	587.91	-996.20	1,438.30	1,387.86	50.44	28.516					
7,650.00	7,386.43	7,588.71	7,429.76	28.90	24.07	-114.08	587.27	-996.00	1,477.73	1,427.04	50.68	29.155					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - Beierle KE 26-361HN - GWOG WELL - GWOG WELL											Offset Site Error: 0.00 usft		
Survey Program: 16-ISWWSA MWD											Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
6,000.00	5,984.54	11,900.74	7,499.06	21.60	79.98	-90.48	-211.00	-309.84	1,490.75	1,451.88	38.86	38.358	
6,100.00	6,084.54	11,900.74	7,499.06	21.94	79.98	-90.48	-211.00	-309.84	1,390.76	1,351.82	38.95	35.709	
6,200.00	6,184.54	11,900.74	7,499.06	22.27	79.98	-90.48	-211.00	-309.84	1,290.78	1,251.74	39.04	33.063	
6,300.00	6,284.54	11,900.74	7,499.06	22.60	79.98	-90.48	-211.00	-309.84	1,190.81	1,151.66	39.14	30.422	
6,400.00	6,384.54	11,900.74	7,499.06	22.94	79.98	-90.48	-211.00	-309.84	1,090.83	1,051.57	39.26	27.786	
6,500.00	6,484.54	11,900.74	7,499.06	23.27	79.98	-90.48	-211.00	-309.84	990.86	951.48	39.39	25.158	
6,600.00	6,584.54	11,900.74	7,499.06	23.61	79.98	-90.48	-211.00	-309.84	890.90	851.37	39.53	22.538	
6,709.26	6,693.80	11,900.74	7,499.06	23.98	79.98	-90.48	-211.00	-309.84	781.70	741.99	39.71	19.686	
6,750.00	6,734.52	11,900.74	7,499.06	24.11	79.98	-179.96	-211.00	-309.84	741.05	701.24	39.80	18.618	
6,800.00	6,784.30	11,900.73	7,499.06	24.27	79.98	-179.97	-210.99	-309.84	691.50	651.50	40.00	17.286	
6,850.00	6,833.64	11,900.72	7,499.06	24.42	79.98	-179.98	-210.97	-309.84	642.67	602.30	40.36	15.922	
6,900.00	6,882.29	11,900.70	7,499.06	24.57	79.98	-179.97	-210.95	-309.84	594.99	553.98	41.02	14.506	
6,950.00	6,930.03	11,900.67	7,499.06	24.71	79.98	-179.97	-210.93	-309.84	549.04	506.87	42.17	13.020	
7,000.00	6,976.62	11,900.64	7,499.06	24.85	79.98	-179.97	-210.90	-309.84	505.54	461.44	44.10	11.463	
7,050.00	7,021.83	11,900.60	7,499.06	24.98	79.98	-179.96	-210.86	-309.84	465.40	418.29	47.11	9.879	
7,100.00	7,065.44	11,900.56	7,499.06	25.12	79.97	-179.96	-210.81	-309.84	429.81	378.34	51.46	8.352	
7,150.00	7,107.25	11,900.51	7,499.06	25.26	79.97	-179.95	-210.76	-309.84	400.16	342.89	57.27	6.987	
7,200.00	7,147.03	11,900.46	7,499.06	25.41	79.97	-179.95	-210.71	-309.84	378.01	313.64	64.37	5.872	
7,250.00	7,184.61	11,900.40	7,499.06	25.59	79.97	-179.94	-210.65	-309.84	364.86	292.65	72.22	5.052	
7,290.02	7,212.97	11,900.35	7,499.06	25.75	79.97	-179.93	-210.60	-309.85	361.55	283.11	78.44	4.609 CC	
7,300.00	7,219.80	11,900.33	7,499.06	25.79	79.97	-179.93	-210.59	-309.85	361.75	281.83	79.92	4.526 ES	
7,350.00	7,252.42	11,900.27	7,499.06	26.05	79.97	-179.92	-210.52	-309.85	368.95	282.34	86.62	4.260	
7,400.00	7,282.33	11,900.19	7,499.06	26.35	79.97	-179.90	-210.45	-309.85	385.85	294.07	91.78	4.204 SF	
7,450.00	7,309.37	11,900.12	7,499.06	26.72	79.97	-179.88	-210.37	-309.85	411.18	315.81	95.38	4.311	
7,500.00	7,333.40	11,900.04	7,499.06	27.16	79.97	-179.86	-210.30	-309.85	443.39	345.71	97.68	4.539	
7,550.00	7,354.32	11,899.96	7,499.06	27.66	79.96	-179.84	-210.21	-309.85	480.95	381.90	99.05	4.856	
7,600.00	7,372.03	11,899.88	7,499.06	28.24	79.96	-179.80	-210.13	-309.85	522.56	422.73	99.83	5.235	
7,650.00	7,386.43	11,899.79	7,499.06	28.90	79.96	-179.75	-210.05	-309.85	567.14	466.90	100.24	5.658	
7,700.00	7,397.45	11,899.70	7,499.06	29.62	79.96	-179.67	-209.96	-309.85	613.86	513.41	100.45	6.111	
7,750.00	7,405.05	11,899.62	7,499.06	30.41	79.96	-179.54	-209.87	-309.85	662.05	561.51	100.55	6.585	
7,800.00	7,409.18	11,899.53	7,499.06	31.26	79.96	-179.27	-209.78	-309.85	711.22	610.63	100.59	7.071	
7,834.26	7,410.00	11,899.47	7,499.06	31.86	79.96	-178.83	-209.72	-309.85	745.25	644.65	100.60	7.408	
7,900.00	7,410.00	11,899.35	7,499.06	33.09	79.95	-178.73	-209.60	-309.85	810.76	710.15	100.61	8.058	
8,000.00	7,410.00	11,899.17	7,499.06	35.13	79.95	-178.57	-209.42	-309.86	910.47	809.85	100.62	9.049	
8,100.00	7,410.00	11,898.99	7,499.06	37.32	79.95	-178.41	-209.25	-309.86	1,010.24	909.62	100.62	10.040	
8,200.00	7,410.00	11,898.81	7,499.06	39.66	79.94	-178.26	-209.07	-309.86	1,110.05	1,009.43	100.63	11.031	
8,300.00	7,410.00	11,898.63	7,499.06	42.11	79.94	-178.10	-208.89	-309.86	1,209.90	1,109.27	100.63	12.024	
8,400.00	7,410.00	11,898.45	7,499.06	44.66	79.94	-177.94	-208.71	-309.86	1,309.76	1,209.13	100.63	13.016	
8,500.00	7,410.00	11,898.28	7,499.06	47.29	79.94	-177.79	-208.53	-309.86	1,409.65	1,309.02	100.63	14.008	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												S25-T1N-R66W (SAM) - Lochbuie 2A-31H-D165 (EXISTING) - CPR WELL - SURVEYS		Offset Site Error:		0.00 usft	
Survey Program:		164-ISCWSA MWD												Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis				Distance						Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor						
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)							
11,906.34	7,410.00	7,001.00	6,906.16	150.80	21.55	69.97	-1,342.19	5,230.35	1,451.53	1,310.16	141.37	10.268	CC, ES, SF				

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> S25-T1N-R66W (SAM) - Lochbuie 2E-31H-D165 (EXISTING) - CPR WELL - SURVEYS													<b>Offset Site Error:</b>	0.00 usft
Survey Program: 164-ISCWSA MWD													<b>Offset Well Error:</b>	0.00 usft
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
11,906.34	7,410.00	7,001.00	6,906.16	150.80	21.56	70.74	-1,341.83	5,269.56	1,466.05	1,325.92	140.13	10.462	CC, ES, SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - Sam 1 (EXISTING) - CPR WELL - NO SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 500-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	83.40	153.34	1,325.95	1,335.35				
100.00	100.00	61.00	61.00	0.14	0.07	83.40	153.34	1,325.95	1,334.78	1,334.58	0.21	6,509.318	
200.00	200.00	161.00	161.00	0.50	0.18	83.40	153.34	1,325.95	1,334.78	1,334.11	0.67	1,982.038	
300.00	300.00	261.00	261.00	0.85	0.29	83.40	153.34	1,325.95	1,334.78	1,333.64	1.14	1,168.994	
400.00	400.00	361.00	361.00	1.21	0.40	83.40	153.34	1,325.95	1,334.78	1,333.17	1.61	828.953	
500.00	500.00	461.00	461.00	1.57	0.51	83.40	153.34	1,325.95	1,334.78	1,332.70	2.08	642.159	
504.51	504.51	465.51	465.51	1.59	0.51	83.40	153.34	1,325.95	1,334.78	1,332.68	2.10	635.703 CC, ES	
600.00	600.00	500.00	500.00	1.93	0.55	83.40	153.34	1,325.95	1,336.18	1,333.66	2.51	531.747	
700.00	700.00	500.00	500.00	2.29	0.55	83.40	153.34	1,325.95	1,344.46	1,341.43	3.03	443.745	
800.00	800.00	500.00	500.00	2.65	0.55	83.40	153.34	1,325.95	1,360.06	1,356.45	3.61	376.875	
900.00	899.98	500.00	500.00	2.99	0.55	-149.73	153.34	1,325.95	1,384.19	1,380.00	4.19	330.588	
1,000.00	999.84	500.00	500.00	3.33	0.55	-149.37	153.34	1,325.95	1,417.81	1,413.08	4.74	299.309	
1,056.01	1,055.67	500.00	500.00	3.52	0.55	-149.11	153.34	1,325.95	1,440.54	1,435.50	5.03	286.319	
1,100.00	1,099.48	500.00	500.00	3.67	0.55	-149.11	153.34	1,325.95	1,459.97	1,454.73	5.25	278.242 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error:	0.00 usft
Survey Program: 1386-ISCWSA MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	83.64	146.31	1,313.12	1,321.36					
100.00	100.00	83.00	83.00	0.14	0.09	83.64	146.31	1,313.12	1,321.25	1,321.02	0.23	5,739.246		
200.00	200.00	183.00	183.00	0.50	0.20	83.64	146.31	1,313.12	1,321.25	1,320.55	0.70	1,888.118		
300.00	300.00	283.00	283.00	0.85	0.31	83.64	146.31	1,313.12	1,321.25	1,320.08	1.17	1,129.922		
400.00	400.00	383.00	383.00	1.21	0.43	83.64	146.31	1,313.12	1,321.25	1,319.61	1.64	806.187		
500.00	500.00	483.00	483.00	1.57	0.54	83.64	146.31	1,313.12	1,321.25	1,319.14	2.11	626.647		
600.00	600.00	583.00	583.00	1.93	0.65	83.64	146.31	1,313.12	1,321.25	1,318.67	2.58	512.509		
700.00	700.00	683.00	683.00	2.29	0.76	83.64	146.31	1,313.12	1,321.25	1,318.20	3.05	433.543		
800.00	800.00	783.00	783.00	2.65	0.87	83.64	146.31	1,313.12	1,321.25	1,317.73	3.52	375.663		
900.00	899.98	882.98	882.98	2.99	0.98	-149.76	146.31	1,313.12	1,322.76	1,318.78	3.97	332.961		
1,000.00	999.84	982.84	982.84	3.33	1.09	-149.83	146.31	1,313.12	1,327.28	1,322.86	4.42	300.294		
1,056.01	1,055.67	1,038.67	1,038.67	3.52	1.15	-149.89	146.31	1,313.12	1,331.13	1,326.46	4.67	284.816		
1,100.00	1,099.48	1,082.48	1,082.48	3.67	1.20	-149.97	146.31	1,313.12	1,334.54	1,329.66	4.87	273.862		
1,200.00	1,199.08	1,182.08	1,182.08	4.03	1.31	-150.16	146.31	1,313.12	1,342.28	1,336.95	5.33	251.946		
1,300.00	1,298.69	1,281.69	1,281.69	4.38	1.42	-150.35	146.31	1,313.12	1,350.03	1,344.25	5.79	233.315		
1,400.00	1,398.29	1,381.29	1,381.29	4.74	1.53	-150.54	146.31	1,313.12	1,357.80	1,351.56	6.25	217.314		
1,500.00	1,497.89	1,470.84	1,470.84	5.11	1.72	-150.71	146.44	1,313.42	1,365.94	1,359.15	6.79	201.169		
1,600.00	1,597.49	1,633.98	1,633.93	5.48	2.07	-151.10	148.43	1,311.08	1,372.68	1,365.16	7.52	182.510		
1,700.00	1,697.09	1,830.58	1,829.75	5.85	2.51	-151.84	155.65	1,295.85	1,373.58	1,365.22	8.36	164.324		
1,800.00	1,796.69	1,996.04	1,993.06	6.22	2.98	-152.72	166.46	1,271.73	1,367.82	1,358.67	9.14	149.584		
1,900.00	1,896.29	2,153.37	2,146.38	6.59	3.54	-153.92	183.48	1,240.97	1,358.07	1,348.09	9.97	136.189		
2,000.00	1,995.89	2,292.52	2,280.05	6.96	4.17	-155.25	203.39	1,207.89	1,344.97	1,334.15	10.83	124.206		
2,100.00	2,095.49	2,435.35	2,415.69	7.34	4.93	-156.76	225.34	1,168.91	1,328.97	1,317.20	11.77	112.941		
2,200.00	2,195.09	2,521.00	2,496.49	7.71	5.41	-157.74	239.33	1,144.22	1,312.14	1,299.61	12.53	104.711		
2,300.00	2,294.70	2,615.00	2,585.32	8.09	5.90	-158.84	254.72	1,117.58	1,296.30	1,282.97	13.33	97.247		
2,400.00	2,394.30	2,704.42	2,669.97	8.47	6.38	-159.89	269.07	1,092.60	1,281.28	1,267.15	14.13	90.677		
2,500.00	2,493.90	2,784.72	2,746.20	8.85	6.81	-160.84	281.75	1,070.80	1,267.49	1,252.58	14.90	85.038		
2,600.00	2,593.50	2,898.58	2,854.39	9.22	7.45	-162.19	299.55	1,040.10	1,254.39	1,238.54	15.85	79.142		
2,700.00	2,693.10	2,995.11	2,945.80	9.60	8.02	-163.38	314.72	1,013.06	1,240.83	1,224.08	16.75	74.067		
2,800.00	2,792.70	3,087.36	3,033.15	9.98	8.57	-164.55	329.41	987.27	1,227.94	1,210.28	17.66	69.545		
2,900.00	2,892.30	3,190.60	3,130.53	10.36	9.24	-165.95	346.97	957.79	1,215.45	1,196.77	18.68	65.080		
3,000.00	2,991.90	3,287.35	3,221.32	10.74	9.88	-167.34	364.45	929.32	1,203.19	1,183.48	19.71	61.050		
3,100.00	3,091.50	3,372.81	3,301.46	11.12	10.44	-168.62	380.47	904.35	1,192.10	1,171.41	20.69	57.613		
3,200.00	3,191.10	3,473.59	3,396.19	11.50	11.07	-170.11	398.69	875.17	1,181.79	1,160.04	21.75	54.342		
3,300.00	3,290.71	3,561.09	3,478.52	11.88	11.62	-171.41	414.39	850.04	1,172.42	1,149.67	22.75	51.538		
3,400.00	3,390.31	3,660.16	3,571.77	12.26	12.25	-172.91	432.13	821.67	1,163.90	1,140.07	23.83	48.847		
3,500.00	3,489.91	3,751.97	3,658.36	12.64	12.81	-174.28	448.00	795.63	1,156.14	1,131.28	24.86	46.509		
3,600.00	3,589.51	3,839.00	3,740.52	13.03	13.35	-175.59	463.31	771.35	1,149.71	1,123.83	25.88	44.429		
3,700.00	3,689.11	3,933.55	3,829.92	13.41	13.94	-177.02	479.90	745.42	1,144.44	1,117.49	26.94	42.476		
3,800.00	3,788.71	4,040.11	3,930.86	13.79	14.58	-178.60	497.54	716.17	1,139.42	1,111.36	28.07	40.598		
3,900.00	3,888.31	4,138.20	4,023.81	14.17	15.19	-179.96	513.01	688.91	1,134.48	1,105.33	29.15	38.923		
4,000.00	3,987.91	4,220.78	4,102.05	14.55	15.69	-178.72	526.58	666.25	1,130.92	1,100.77	30.15	37.513		
4,100.00	4,087.51	4,343.03	4,217.72	14.93	16.46	-176.88	545.96	631.79	1,127.17	1,095.78	31.39	35.904		
4,200.00	4,187.11	4,436.79	4,306.49	15.32	17.04	-175.48	559.83	604.96	1,123.33	1,090.86	32.47	34.595		
4,300.00	4,286.71	4,524.15	4,389.07	15.70	17.60	-174.14	573.60	580.03	1,120.89	1,087.36	33.53	33.433		
4,400.00	4,386.32	4,619.72	4,478.98	16.08	18.24	-172.60	589.89	552.00	1,119.52	1,084.85	34.67	32.289		
4,496.50	4,482.43	4,710.54	4,564.09	16.45	18.86	-171.08	605.99	524.70	1,119.01	1,083.22	35.79	31.269		
4,500.00	4,485.92	4,713.64	4,567.00	16.46	18.88	-171.03	606.54	523.78	1,119.01	1,083.19	35.82	31.236		
4,600.00	4,585.52	4,805.44	4,653.44	16.84	19.48	-169.56	622.24	497.19	1,119.73	1,082.81	36.93	30.324		
4,700.00	4,685.12	4,903.18	4,745.87	17.23	20.09	-168.06	637.96	469.60	1,121.10	1,083.06	38.03	29.478		
4,759.45	4,744.33	4,954.40	4,794.29	17.45	20.41	-167.27	646.39	455.14	1,122.45	1,083.80	38.65	29.045		
4,800.00	4,784.74	4,991.83	4,829.61	17.61	20.66	-166.68	652.76	444.54	1,123.39	1,084.31	39.08	28.743		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS													Offset Site Error: 0.00 usft	
Survey Program: 1386-ISCWSA MWD													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,900.00	4,884.57	5,087.53	4,919.83	17.98	21.28	165.14	669.12	417.13	1,123.82	1,083.63	40.19	27.962		
5,000.00	4,984.54	5,175.63	5,003.17	18.33	21.83	163.71	683.96	392.74	1,122.14	1,080.94	41.20	27.235		
5,015.46	5,000.00	5,189.88	5,016.70	18.38	21.92	36.86	686.32	388.90	1,121.71	1,080.35	41.36	27.123		
5,100.00	5,084.54	5,267.92	5,090.92	18.65	22.38	35.63	699.01	368.39	1,119.55	1,077.38	42.17	26.546		
5,200.00	5,184.54	5,360.98	5,180.23	18.98	22.88	34.29	712.82	346.22	1,117.99	1,074.91	43.08	25.950		
5,300.00	5,284.54	5,462.05	5,278.31	19.30	23.36	33.04	725.49	325.39	1,116.97	1,073.02	43.95	25.413		
5,400.00	5,384.54	5,565.58	5,379.67	19.63	23.79	31.97	735.90	307.13	1,115.95	1,071.20	44.75	24.937		
5,500.00	5,484.54	5,666.59	5,479.27	19.95	24.14	31.10	743.71	292.22	1,114.80	1,069.34	45.47	24.519		
5,600.00	5,584.54	5,765.66	5,577.31	20.28	24.45	30.37	750.21	279.61	1,113.93	1,067.81	46.13	24.149		
5,700.00	5,684.54	5,868.45	5,679.30	20.61	24.74	29.72	755.73	268.02	1,112.92	1,066.16	46.76	23.799		
5,800.00	5,784.54	5,966.30	5,776.64	20.94	24.98	29.21	759.75	258.92	1,111.93	1,064.58	47.35	23.484		
5,900.00	5,884.54	6,075.90	5,885.86	21.27	25.22	28.74	763.19	250.53	1,110.98	1,063.06	47.92	23.182		
6,000.00	5,984.54	6,172.48	5,982.26	21.60	25.39	28.45	764.40	244.78	1,109.24	1,060.80	48.44	22.899		
6,100.00	6,084.54	6,272.47	6,082.18	21.94	25.54	28.27	764.99	241.10	1,108.01	1,059.08	48.93	22.646		
6,200.00	6,184.54	6,377.28	6,186.94	22.27	25.67	28.14	764.74	238.19	1,106.48	1,057.08	49.40	22.399		
6,300.00	6,284.54	6,478.82	6,288.46	22.60	25.79	28.07	763.75	236.10	1,104.66	1,054.81	49.85	22.158		
6,400.00	6,384.54	6,582.30	6,391.92	22.94	25.90	28.03	762.26	234.45	1,102.64	1,052.34	50.30	21.921		
6,500.00	6,484.54	6,686.71	6,496.29	23.27	26.00	28.02	760.16	233.03	1,100.22	1,049.48	50.74	21.682		
6,600.00	6,584.54	6,792.43	6,601.98	23.61	26.10	28.03	757.38	231.83	1,097.37	1,046.20	51.17	21.444		
6,709.26	6,693.80	6,909.02	6,718.48	23.98	26.20	28.10	753.24	231.00	1,093.58	1,041.94	51.64	21.178		
6,750.00	6,734.52	6,953.94	6,763.37	24.11	26.23	-61.50	751.31	230.80	1,091.40	1,039.60	51.80	21.070		
6,800.00	6,784.30	7,009.53	6,818.88	24.27	26.27	-61.99	748.62	230.56	1,086.98	1,035.00	51.98	20.911		
6,850.00	6,833.64	7,063.17	6,872.45	24.42	26.31	-62.79	745.72	230.34	1,080.70	1,028.54	52.16	20.719		
6,900.00	6,882.29	7,112.88	6,922.08	24.57	26.34	-63.85	742.87	230.18	1,072.79	1,020.45	52.34	20.498		
6,950.00	6,930.03	7,161.37	6,970.48	24.71	26.38	-65.18	740.01	230.09	1,063.42	1,010.92	52.50	20.255		
7,000.00	6,976.62	7,208.30	7,017.33	24.85	26.40	-66.77	737.16	230.11	1,052.76	1,000.10	52.66	19.993		
7,050.00	7,021.83	7,253.94	7,062.87	24.98	26.43	-68.61	734.31	230.24	1,041.00	988.20	52.80	19.715		
7,100.00	7,065.44	7,298.06	7,106.90	25.12	26.46	-70.68	731.49	230.46	1,028.35	975.41	52.94	19.424		
7,150.00	7,107.25	7,341.81	7,150.56	25.26	26.48	-72.99	728.62	230.78	1,015.04	961.98	53.07	19.128		
7,200.00	7,147.03	7,387.94	7,196.57	25.41	26.50	-75.62	725.36	231.15	1,001.21	948.04	53.17	18.832		
7,250.00	7,184.61	7,431.40	7,239.90	25.59	26.53	-78.38	722.00	231.52	987.10	933.83	53.26	18.532		
7,300.00	7,219.80	7,471.35	7,279.71	25.79	26.54	-81.17	718.68	231.88	973.10	919.74	53.36	18.235		
7,350.00	7,252.42	7,508.44	7,316.66	26.05	26.56	-83.95	715.42	232.24	959.61	906.14	53.47	17.946		
7,400.00	7,282.33	7,536.44	7,344.54	26.35	26.57	-86.34	712.90	232.48	947.09	893.45	53.63	17.659		
7,450.00	7,309.37	7,558.26	7,366.28	26.72	26.59	-88.37	711.08	232.53	936.12	882.28	53.83	17.389		
7,500.00	7,333.40	7,577.28	7,385.24	27.16	26.60	-90.15	709.61	232.46	927.05	873.01	54.05	17.152		
7,550.00	7,354.32	7,593.46	7,401.39	27.66	26.61	-91.62	708.45	232.31	920.21	865.92	54.28	16.953		
7,600.00	7,372.03	7,615.00	7,422.88	28.24	26.62	-93.25	707.04	232.00	915.88	861.40	54.47	16.813		
7,650.00	7,386.43	7,615.00	7,422.88	28.90	26.62	-93.39	707.04	232.00	914.14	859.36	54.78	16.686		
7,654.53	7,387.57	7,615.00	7,422.88	28.96	26.62	-93.39	707.04	232.00	914.13	859.32	54.81	16.677 CC, ES		
7,700.00	7,397.45	7,625.83	7,433.68	29.62	26.63	-93.96	706.38	231.81	915.27	860.26	55.01	16.638 SF		
7,750.00	7,405.05	7,631.36	7,439.20	30.41	26.64	-93.98	706.06	231.72	919.29	864.06	55.24	16.643		
7,800.00	7,409.18	7,634.03	7,441.87	31.26	26.64	-93.59	705.90	231.67	926.22	870.78	55.43	16.709		
7,834.26	7,410.00	7,634.20	7,442.03	31.86	26.64	-93.08	705.89	231.67	932.60	877.05	55.55	16.789		
7,900.00	7,410.00	7,633.22	7,441.06	33.09	26.64	-93.02	705.95	231.68	948.29	892.56	55.74	17.014		
8,000.00	7,410.00	7,631.73	7,439.57	35.13	26.64	-92.92	706.04	231.71	980.17	924.22	55.95	17.519		
8,100.00	7,410.00	7,630.24	7,438.08	37.32	26.64	-92.83	706.12	231.74	1,020.87	964.80	56.08	18.205		
8,200.00	7,410.00	7,628.74	7,436.59	39.66	26.63	-92.74	706.21	231.76	1,069.41	1,013.28	56.13	19.051		
8,300.00	7,410.00	7,627.24	7,435.10	42.11	26.63	-92.64	706.30	231.79	1,124.76	1,068.62	56.14	20.035		
8,400.00	7,410.00	7,625.74	7,433.60	44.66	26.63	-92.55	706.39	231.81	1,185.97	1,129.85	56.12	21.134		
8,500.00	7,410.00	7,624.24	7,432.10	47.29	26.63	-92.45	706.48	231.84	1,252.18	1,196.10	56.08	22.327		
8,600.00	7,410.00	7,615.00	7,422.88	49.98	26.62	-91.88	707.04	232.00	1,322.67	1,266.59	56.08	23.586		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												S25-T1N-R66W (SAM) - Sam 13-25 (EXISTING) - CPR WELL - SURVEYS		Offset Site Error:		0.00 usft	
Survey Program:				1386-ISCWSA MWD										Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor					
							+N/-S (usft)	+E/-W (usft)									
8,700.00	7,410.00	7,615.00	7,422.88	52.73	26.62	-91.88	707.04	232.00	1,396.73	1,340.61	56.13	24.885					
8,800.00	7,410.00	7,615.00	7,422.88	55.53	26.62	-91.88	707.04	232.00	1,473.86	1,417.68	56.18	26.233					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	0.11	80.15	0.15	80.15					
100.00	100.00	100.00	100.00	0.14	0.14	0.11	80.15	0.15	80.15	79.87	0.28	290.370		
200.00	200.00	200.00	200.00	0.50	0.50	0.11	80.15	0.15	80.15	79.16	0.99	80.717 CC, ES		
300.00	300.00	297.33	297.31	0.85	0.85	-0.19	81.75	-0.27	81.79	80.05	1.74	46.970		
400.00	400.00	394.43	394.28	1.21	1.20	-0.99	86.53	-1.50	86.74	84.22	2.52	34.463		
500.00	500.00	491.09	490.59	1.57	1.56	-2.15	94.45	-3.55	94.99	91.70	3.29	28.841		
600.00	600.00	587.08	585.91	1.93	1.91	-3.47	105.43	-6.39	106.56	102.49	4.06	26.215		
700.00	700.00	682.21	679.94	2.29	2.28	-4.78	119.35	-9.99	121.43	116.61	4.83	25.160		
800.00	800.00	776.28	772.40	2.65	2.67	-6.00	136.08	-14.31	139.58	134.01	5.58	25.030		
900.00	899.98	871.71	865.68	2.99	3.08	119.69	155.59	-19.36	161.35	155.09	6.26	25.787		
1,000.00	999.84	968.82	960.52	3.33	3.51	119.78	175.77	-24.57	185.15	178.23	6.92	26.771		
1,056.01	1,055.67	1,022.99	1,013.43	3.52	3.75	120.16	187.02	-27.48	199.23	191.94	7.29	27.325		
1,100.00	1,099.48	1,065.47	1,054.92	3.67	3.94	120.70	195.85	-29.76	210.52	202.93	7.59	27.749		
1,200.00	1,199.08	1,162.03	1,149.23	4.03	4.38	121.74	215.90	-34.95	236.23	227.96	8.26	28.585		
1,300.00	1,298.69	1,258.59	1,243.54	4.38	4.82	122.57	235.96	-40.13	261.99	253.04	8.95	29.264		
1,400.00	1,398.29	1,355.15	1,337.85	4.74	5.26	123.25	256.02	-45.32	287.81	278.16	9.65	29.823		
1,500.00	1,497.89	1,451.71	1,432.16	5.11	5.70	123.82	276.08	-50.50	313.65	303.29	10.36	30.289		
1,600.00	1,597.49	1,548.27	1,526.48	5.48	6.15	124.30	296.14	-55.69	339.52	328.45	11.07	30.681		
1,700.00	1,697.09	1,644.83	1,620.79	5.85	6.59	124.72	316.20	-60.87	365.40	353.62	11.78	31.016		
1,800.00	1,796.69	1,741.39	1,715.10	6.22	7.04	125.08	336.26	-66.06	391.30	378.80	12.50	31.303		
1,900.00	1,896.29	1,837.95	1,809.41	6.59	7.49	125.39	356.32	-71.24	417.22	404.00	13.22	31.553		
2,000.00	1,995.89	1,934.51	1,903.72	6.96	7.94	125.67	376.38	-76.43	443.14	429.20	13.95	31.771		
2,100.00	2,095.49	2,031.07	1,998.03	7.34	8.39	125.92	396.44	-81.62	469.08	454.40	14.68	31.963		
2,200.00	2,195.09	2,127.63	2,092.34	7.71	8.84	126.14	416.50	-86.80	495.02	479.61	15.41	32.133		
2,300.00	2,294.70	2,224.19	2,186.65	8.09	9.29	126.34	436.56	-91.99	520.97	504.83	16.14	32.285		
2,400.00	2,394.30	2,320.75	2,280.96	8.47	9.74	126.52	456.62	-97.17	546.92	530.05	16.87	32.421		
2,500.00	2,493.90	2,417.31	2,375.27	8.85	10.19	126.69	476.68	-102.36	572.88	555.27	17.60	32.544		
2,600.00	2,593.50	2,513.87	2,469.58	9.22	10.64	126.84	496.74	-107.54	598.84	580.50	18.34	32.655		
2,700.00	2,693.10	2,610.43	2,563.89	9.60	11.09	126.97	516.80	-112.73	624.80	605.73	19.07	32.755		
2,800.00	2,792.70	2,706.99	2,658.21	9.98	11.54	127.10	536.86	-117.91	650.77	630.96	19.81	32.847		
2,900.00	2,892.30	2,803.55	2,752.52	10.36	11.99	127.22	556.92	-123.10	676.74	656.19	20.55	32.932		
3,000.00	2,991.90	2,900.11	2,846.83	10.74	12.44	127.33	576.98	-128.29	702.71	681.43	21.29	33.009		
3,100.00	3,091.50	2,996.66	2,941.14	11.12	12.89	127.43	597.04	-133.47	728.69	706.66	22.03	33.080		
3,200.00	3,191.10	3,093.22	3,035.45	11.50	13.34	127.52	617.10	-138.66	754.67	731.90	22.77	33.146		
3,300.00	3,290.71	3,189.78	3,129.76	11.88	13.80	127.61	637.16	-143.84	780.65	757.14	23.51	33.208		
3,400.00	3,390.31	3,286.34	3,224.07	12.26	14.25	127.69	657.22	-149.03	806.63	782.38	24.25	33.264		
3,500.00	3,489.91	3,382.90	3,318.38	12.64	14.70	127.77	677.28	-154.21	832.61	807.62	24.99	33.317		
3,600.00	3,589.51	3,479.46	3,412.69	13.03	15.15	127.84	697.34	-159.40	858.59	832.86	25.73	33.367		
3,700.00	3,689.11	3,576.02	3,507.00	13.41	15.60	127.91	717.40	-164.58	884.58	858.10	26.47	33.413		
3,800.00	3,788.71	3,672.58	3,601.31	13.79	16.06	127.97	737.46	-169.77	910.56	883.35	27.22	33.456		
3,900.00	3,888.31	3,769.14	3,695.62	14.17	16.51	128.03	757.52	-174.96	936.55	908.59	27.96	33.497		
4,000.00	3,987.91	3,865.70	3,789.94	14.55	16.96	128.09	777.58	-180.14	962.54	933.83	28.70	33.535		
4,100.00	4,087.51	3,962.26	3,884.25	14.93	17.41	128.14	797.64	-185.33	988.52	959.08	29.45	33.571		
4,200.00	4,187.11	4,058.82	3,978.56	15.32	17.86	128.19	817.69	-190.51	1,014.51	984.32	30.19	33.605		
4,300.00	4,286.71	4,155.38	4,072.87	15.70	18.32	128.24	837.75	-195.70	1,040.50	1,009.57	30.93	33.638		
4,400.00	4,386.32	4,251.94	4,167.18	16.08	18.77	128.29	857.81	-200.88	1,066.49	1,034.82	31.68	33.668		
4,500.00	4,485.92	4,348.50	4,261.49	16.46	19.22	128.33	877.87	-206.07	1,092.49	1,060.06	32.42	33.697		
4,600.00	4,585.52	4,445.06	4,355.80	16.84	19.67	128.37	897.93	-211.25	1,118.48	1,085.31	33.17	33.724		
4,700.00	4,685.12	4,541.62	4,450.11	17.23	20.13	128.41	917.99	-216.44	1,144.47	1,110.56	33.91	33.750		
4,759.45	4,744.33	4,599.03	4,506.18	17.45	20.39	128.44	929.92	-219.52	1,159.92	1,125.57	34.35	33.765		
4,800.00	4,784.74	4,638.23	4,544.47	17.61	20.58	128.61	938.06	-221.63	1,170.29	1,135.64	34.65	33.771		
4,900.00	4,884.57	4,735.27	4,639.24	17.98	21.03	128.91	958.22	-226.84	1,194.37	1,158.98	35.39	33.750		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: O-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference				Offset		Semi Major Axis				Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,000.00	4,984.54	4,832.72	4,734.43	18.33	21.49	129.05	978.47	-232.07	1,216.33	1,180.22	36.11	33.680		
5,015.46	5,000.00	4,847.82	4,749.17	18.38	21.56	2.44	981.60	-232.88	1,219.54	1,183.31	36.22	33.667		
5,100.00	5,084.54	4,930.39	4,829.82	18.65	21.95	2.19	998.76	-237.32	1,236.93	1,200.12	36.82	33.597		
5,200.00	5,184.54	5,028.06	4,925.22	18.98	22.41	1.91	1,019.05	-242.56	1,257.54	1,220.02	37.52	33.517		
5,300.00	5,284.54	5,125.73	5,020.61	19.30	22.86	1.64	1,039.34	-247.81	1,278.18	1,239.95	38.22	33.439		
5,400.00	5,384.54	5,223.40	5,116.01	19.63	23.32	1.38	1,059.63	-253.05	1,298.84	1,259.91	38.93	33.364		
5,500.00	5,484.54	5,321.07	5,211.41	19.95	23.78	1.12	1,079.92	-258.30	1,319.53	1,279.89	39.63	33.292		
5,600.00	5,584.54	5,418.74	5,306.80	20.28	24.24	0.88	1,100.21	-263.54	1,340.24	1,299.90	40.34	33.223		
5,700.00	5,684.54	5,516.41	5,402.20	20.61	24.69	0.64	1,120.50	-268.79	1,360.97	1,319.92	41.05	33.156		
5,800.00	5,784.54	5,614.09	5,497.59	20.94	25.15	0.41	1,140.79	-274.03	1,381.73	1,339.97	41.76	33.091		
5,900.00	5,884.54	5,718.86	5,599.94	21.27	25.64	0.17	1,162.52	-279.65	1,402.49	1,359.97	42.52	32.985		
6,000.00	5,984.54	5,907.21	5,785.27	21.60	26.46	-0.18	1,194.83	-288.00	1,419.67	1,375.86	43.81	32.402		
6,100.00	6,084.54	6,099.25	5,976.08	21.94	27.18	-0.39	1,215.56	-293.36	1,430.49	1,385.57	44.92	31.847		
6,200.00	6,184.54	6,293.33	6,169.93	22.27	27.79	-0.47	1,223.89	-295.52	1,434.80	1,389.00	45.80	31.326		
6,300.00	6,284.54	6,407.94	6,284.54	22.60	28.11	-0.48	1,224.05	-295.56	1,434.88	1,388.40	46.48	30.871		
6,400.00	6,384.54	6,507.94	6,384.54	22.94	28.39	-0.48	1,224.05	-295.56	1,434.88	1,387.73	47.15	30.435		
6,500.00	6,484.54	6,607.94	6,484.54	23.27	28.67	-0.48	1,224.05	-295.56	1,434.88	1,387.06	47.81	30.010		
6,600.00	6,584.54	6,707.94	6,584.54	23.61	28.96	-0.48	1,224.05	-295.56	1,434.88	1,386.40	48.48	29.597		
6,709.26	6,693.80	6,817.20	6,693.80	23.98	29.27	-0.48	1,224.05	-295.56	1,434.88	1,385.66	49.21	29.157		
6,750.00	6,734.52	6,857.79	6,734.37	24.11	29.38	-89.89	1,224.06	-294.41	1,434.88	1,385.40	49.47	29.002		
6,800.00	6,784.30	6,907.61	6,783.97	24.27	29.51	-89.89	1,224.10	-289.86	1,434.88	1,385.09	49.78	28.824		
6,850.00	6,833.64	6,957.43	6,833.13	24.42	29.64	-89.90	1,224.19	-281.87	1,434.88	1,384.80	50.08	28.653		
6,900.00	6,882.29	7,007.25	6,881.62	24.57	29.76	-89.90	1,224.30	-270.49	1,434.88	1,384.51	50.37	28.488		
6,950.00	6,930.03	7,057.07	6,929.21	24.71	29.87	-89.90	1,224.45	-255.77	1,434.88	1,384.23	50.65	28.329		
7,000.00	6,976.62	7,106.90	6,975.66	24.85	29.98	-89.90	1,224.63	-237.77	1,434.88	1,383.94	50.93	28.173		
7,050.00	7,021.83	7,156.73	7,020.75	24.98	30.08	-89.91	1,224.85	-216.58	1,434.88	1,383.66	51.21	28.017		
7,100.00	7,065.44	7,206.57	7,064.27	25.12	30.17	-89.91	1,225.10	-192.30	1,434.88	1,383.37	51.51	27.856		
7,150.00	7,107.25	7,256.41	7,106.00	25.26	30.25	-89.91	1,225.37	-165.06	1,434.88	1,383.05	51.83	27.687		
7,200.00	7,147.03	7,306.27	7,145.73	25.41	30.33	-89.92	1,225.68	-134.97	1,434.88	1,382.70	52.17	27.502		
7,250.00	7,184.61	7,356.13	7,183.29	25.59	30.39	-89.92	1,226.01	-102.19	1,434.87	1,382.31	52.57	27.296		
7,300.00	7,219.80	7,406.00	7,218.48	25.79	30.45	-89.93	1,226.37	-66.87	1,434.87	1,381.85	53.03	27.060		
7,350.00	7,252.42	7,455.87	7,251.13	26.05	30.51	-89.93	1,226.75	-29.18	1,434.87	1,381.31	53.56	26.789		
7,400.00	7,282.33	7,505.76	7,281.08	26.35	30.55	-89.94	1,227.16	10.70	1,434.87	1,380.68	54.19	26.476		
7,450.00	7,309.37	7,555.66	7,308.20	26.72	30.59	-89.95	1,227.58	52.58	1,434.87	1,379.94	54.94	26.118		
7,500.00	7,333.40	7,605.57	7,332.33	27.16	30.62	-89.95	1,228.03	96.25	1,434.87	1,379.07	55.81	25.712		
7,550.00	7,354.32	7,655.50	7,353.37	27.66	30.65	-89.96	1,228.49	141.51	1,434.87	1,378.06	56.81	25.258		
7,600.00	7,372.03	7,705.43	7,371.22	28.24	30.67	-89.97	1,228.96	188.13	1,434.87	1,376.92	57.95	24.760		
7,650.00	7,386.43	7,755.38	7,385.77	28.90	30.73	-89.97	1,229.45	235.90	1,434.87	1,375.64	59.23	24.224		
7,700.00	7,397.45	7,805.33	7,396.96	29.62	31.08	-89.98	1,229.94	284.57	1,434.87	1,374.22	60.65	23.657		
7,750.00	7,405.05	7,855.31	7,404.73	30.41	31.79	-89.99	1,230.44	333.92	1,434.87	1,372.68	62.20	23.070		
7,800.00	7,409.18	7,905.29	7,409.05	31.26	32.60	-89.99	1,230.95	383.71	1,434.87	1,371.02	63.85	22.471		
7,834.26	7,410.00	7,939.55	7,410.00	31.86	33.18	-90.00	1,231.30	417.95	1,434.87	1,369.83	65.04	22.060		
7,900.00	7,410.00	8,005.29	7,410.00	33.09	34.38	-90.00	1,231.97	483.68	1,434.87	1,367.41	67.46	21.269		
8,000.00	7,410.00	8,105.29	7,410.00	35.13	36.35	-90.00	1,232.98	583.68	1,434.87	1,363.42	71.46	20.080		
8,100.00	7,410.00	8,205.29	7,410.00	37.32	38.49	-90.00	1,234.00	683.67	1,434.87	1,359.09	75.78	18.934		
8,200.00	7,410.00	8,305.29	7,410.00	39.66	40.77	-90.00	1,235.02	783.67	1,434.87	1,354.48	80.39	17.849		
8,300.00	7,410.00	8,405.29	7,410.00	42.11	43.17	-90.00	1,236.03	883.66	1,434.87	1,349.64	85.23	16.835		
8,400.00	7,410.00	8,505.29	7,410.00	44.66	45.66	-90.00	1,237.05	983.66	1,434.87	1,344.61	90.27	15.896		
8,500.00	7,410.00	8,605.29	7,410.00	47.29	48.24	-90.00	1,238.06	1,083.65	1,434.87	1,339.41	95.47	15.030		
8,600.00	7,410.00	8,705.29	7,410.00	49.98	50.89	-90.00	1,239.08	1,183.65	1,434.87	1,334.06	100.81	14.234		
8,700.00	7,410.00	8,805.29	7,410.00	52.73	53.59	-90.00	1,240.10	1,283.64	1,434.87	1,328.60	106.27	13.502		
8,800.00	7,410.00	8,905.29	7,410.00	55.53	56.36	-90.00	1,241.11	1,383.64	1,434.87	1,323.04	111.83	12.831		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3A-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,900.00	7,410.00	9,005.29	7,410.00	58.37	59.16	-90.00	1,242.13	1,483.63	1,434.87	1,317.40	117.48	12.214		
9,000.00	7,410.00	9,105.29	7,410.00	61.25	62.01	-90.00	1,243.15	1,583.63	1,434.87	1,311.67	123.20	11.647		
9,100.00	7,410.00	9,205.29	7,410.00	64.16	64.88	-90.00	1,244.16	1,683.62	1,434.87	1,305.89	128.99	11.124		
9,200.00	7,410.00	9,305.29	7,410.00	67.10	67.79	-90.00	1,245.18	1,783.62	1,434.87	1,300.04	134.83	10.642		
9,300.00	7,410.00	9,405.29	7,410.00	70.06	70.72	-90.00	1,246.19	1,883.61	1,434.87	1,294.15	140.72	10.196		
9,400.00	7,410.00	9,505.29	7,410.00	73.04	73.68	-90.00	1,247.21	1,983.61	1,434.87	1,288.21	146.66	9.784		
9,500.00	7,410.00	9,605.29	7,410.00	76.04	76.65	-90.00	1,248.23	2,083.60	1,434.87	1,282.23	152.64	9.401		
9,600.00	7,410.00	9,705.29	7,410.00	79.06	79.65	-90.00	1,249.24	2,183.59	1,434.87	1,276.22	158.65	9.044		
9,700.00	7,410.00	9,805.29	7,410.00	82.09	82.66	-90.00	1,250.26	2,283.59	1,434.87	1,270.18	164.69	8.713		
9,800.00	7,410.00	9,905.29	7,410.00	85.13	85.68	-90.00	1,251.28	2,383.58	1,434.87	1,264.12	170.75	8.403		
9,900.00	7,410.00	10,005.29	7,410.00	88.18	88.72	-90.00	1,252.29	2,483.58	1,434.87	1,258.03	176.85	8.114		
10,000.00	7,410.00	10,105.29	7,410.00	91.25	91.76	-90.00	1,253.31	2,583.57	1,434.87	1,251.91	182.96	7.843		
10,100.00	7,410.00	10,205.29	7,410.00	94.32	94.82	-90.00	1,254.32	2,683.57	1,434.87	1,245.78	189.09	7.588		
10,200.00	7,410.00	10,305.29	7,410.00	97.40	97.89	-90.00	1,255.34	2,783.56	1,434.87	1,239.63	195.24	7.349		
10,300.00	7,410.00	10,405.29	7,410.00	100.50	100.97	-90.00	1,256.36	2,883.56	1,434.87	1,233.46	201.41	7.124		
10,400.00	7,410.00	10,505.29	7,410.00	103.59	104.05	-90.00	1,257.37	2,983.55	1,434.87	1,227.28	207.59	6.912		
10,500.00	7,410.00	10,605.29	7,410.00	106.70	107.14	-90.00	1,258.39	3,083.55	1,434.87	1,221.08	213.79	6.712		
10,600.00	7,410.00	10,705.29	7,410.00	109.81	110.24	-90.00	1,259.41	3,183.54	1,434.87	1,214.87	220.00	6.522		
10,700.00	7,410.00	10,805.29	7,410.00	112.92	113.34	-90.00	1,260.42	3,283.54	1,434.87	1,208.65	226.22	6.343		
10,800.00	7,410.00	10,905.29	7,410.00	116.04	116.45	-90.00	1,261.44	3,383.53	1,434.87	1,202.42	232.45	6.173		
10,900.00	7,410.00	11,005.29	7,410.00	119.17	119.57	-90.00	1,262.45	3,483.53	1,434.87	1,196.18	238.69	6.011		
11,000.00	7,410.00	11,105.29	7,410.00	122.30	122.69	-90.00	1,263.47	3,583.52	1,434.87	1,189.93	244.94	5.858		
11,100.00	7,410.00	11,205.29	7,410.00	125.43	125.81	-90.00	1,264.49	3,683.52	1,434.87	1,183.67	251.20	5.712		
11,200.00	7,410.00	11,305.29	7,410.00	128.57	128.94	-90.00	1,265.50	3,783.51	1,434.87	1,177.41	257.46	5.573		
11,300.00	7,410.00	11,405.29	7,410.00	131.71	132.07	-90.00	1,266.52	3,883.51	1,434.87	1,171.14	263.73	5.441		
11,400.00	7,410.00	11,505.29	7,410.00	134.85	135.20	-90.00	1,267.54	3,983.50	1,434.87	1,164.86	270.01	5.314		
11,500.00	7,410.00	11,605.29	7,410.00	138.00	138.34	-90.00	1,268.55	4,083.50	1,434.87	1,158.57	276.30	5.193		
11,600.00	7,410.00	11,705.29	7,410.00	141.14	141.48	-90.00	1,269.57	4,183.49	1,434.87	1,152.28	282.59	5.078		
11,700.00	7,410.00	11,805.29	7,410.00	144.30	144.63	-90.00	1,270.59	4,283.49	1,434.87	1,145.99	288.88	4.967		
11,800.00	7,410.00	11,905.29	7,410.00	147.45	147.77	-90.00	1,271.60	4,383.48	1,434.87	1,139.69	295.18	4.861		
11,906.34	7,410.00	12,011.63	7,410.00	150.80	151.12	-90.00	1,272.68	4,489.82	1,434.87	1,132.98	301.89	4.753 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-0.04	69.94	-0.04	69.94				
100.00	100.00	100.00	100.00	0.14	0.14	-0.04	69.94	-0.04	69.94	69.66	0.28	253.380	
200.00	200.00	200.00	200.00	0.50	0.50	-0.04	69.94	-0.04	69.94	68.95	0.99	70.434	
300.00	300.00	300.00	300.00	0.85	0.85	-0.04	69.94	-0.04	69.94	68.23	1.71	40.902 CC, ES	
400.00	400.00	397.67	397.65	1.21	1.21	-0.41	71.54	-0.51	71.58	69.13	2.45	29.268	
500.00	500.00	495.11	494.96	1.57	1.56	-1.42	76.32	-1.89	76.51	73.30	3.21	23.868	
600.00	600.00	592.11	591.60	1.93	1.91	-2.83	84.23	-4.17	84.75	80.79	3.97	21.351	
700.00	700.00	688.43	687.24	2.29	2.27	-4.41	95.20	-7.34	96.33	91.60	4.73	20.365	
800.00	800.00	783.88	781.59	2.65	2.64	-5.94	109.11	-11.35	111.23	105.75	5.48	20.289	
900.00	899.98	878.13	874.21	2.99	3.02	119.61	125.79	-16.17	130.27	124.06	6.21	20.975	
1,000.00	999.84	975.17	969.24	3.33	3.43	119.70	144.73	-21.63	152.84	145.98	6.87	22.261	
1,056.01	1,055.67	1,029.52	1,022.45	3.52	3.66	120.15	155.33	-24.70	166.24	159.00	7.25	22.942	
1,100.00	1,099.48	1,072.15	1,064.19	3.67	3.84	120.73	163.65	-27.10	177.00	169.46	7.54	23.467	
1,200.00	1,199.08	1,169.03	1,159.06	4.03	4.27	121.84	182.56	-32.56	201.50	193.27	8.22	24.508	
1,300.00	1,298.69	1,265.92	1,253.92	4.38	4.69	122.70	201.47	-38.02	226.05	217.14	8.91	25.365	
1,400.00	1,398.29	1,362.81	1,348.79	4.74	5.12	123.40	220.38	-43.48	250.64	241.03	9.61	26.079	
1,500.00	1,497.89	1,459.70	1,443.66	5.11	5.55	123.97	239.29	-48.94	275.26	264.94	10.32	26.681	
1,600.00	1,597.49	1,556.59	1,538.53	5.48	5.99	124.44	258.20	-54.40	299.90	288.87	11.03	27.194	
1,700.00	1,697.09	1,653.48	1,633.40	5.85	6.42	124.85	277.11	-59.85	324.56	312.81	11.74	27.635	
1,800.00	1,796.69	1,750.37	1,728.27	6.22	6.86	125.20	296.02	-65.31	349.23	336.76	12.46	28.018	
1,900.00	1,896.29	1,847.26	1,823.13	6.59	7.30	125.50	314.94	-70.77	373.91	360.72	13.19	28.353	
2,000.00	1,995.89	1,944.14	1,918.00	6.96	7.73	125.76	333.85	-76.23	398.60	384.69	13.91	28.649	
2,100.00	2,095.49	2,041.03	2,012.87	7.34	8.17	126.00	352.76	-81.69	423.30	408.66	14.64	28.911	
2,200.00	2,195.09	2,137.92	2,107.74	7.71	8.61	126.20	371.67	-87.15	448.00	432.63	15.37	29.145	
2,300.00	2,294.70	2,234.81	2,202.61	8.09	9.05	126.39	390.58	-92.61	472.71	456.60	16.10	29.355	
2,400.00	2,394.30	2,331.70	2,297.48	8.47	9.49	126.56	409.49	-98.07	497.42	480.58	16.84	29.545	
2,500.00	2,493.90	2,428.59	2,392.34	8.85	9.93	126.71	428.40	-103.53	522.13	504.56	17.57	29.717	
2,600.00	2,593.50	2,525.48	2,487.21	9.22	10.37	126.85	447.31	-108.99	546.85	528.55	18.31	29.873	
2,700.00	2,693.10	2,622.37	2,582.08	9.60	10.82	126.97	466.22	-114.45	571.58	552.53	19.04	30.016	
2,800.00	2,792.70	2,719.25	2,676.95	9.98	11.26	127.09	485.13	-119.91	596.30	576.52	19.78	30.147	
2,900.00	2,892.30	2,816.14	2,771.82	10.36	11.70	127.20	504.04	-125.37	621.02	600.51	20.52	30.268	
3,000.00	2,991.90	2,913.03	2,866.69	10.74	12.14	127.29	522.95	-130.83	645.75	624.50	21.26	30.380	
3,100.00	3,091.50	3,009.92	2,961.56	11.12	12.58	127.38	541.86	-136.28	670.48	648.49	22.00	30.483	
3,200.00	3,191.10	3,106.81	3,056.42	11.50	13.03	127.47	560.77	-141.74	695.21	672.48	22.74	30.578	
3,300.00	3,290.71	3,203.70	3,151.29	11.88	13.47	127.55	579.68	-147.20	719.95	696.47	23.48	30.667	
3,400.00	3,390.31	3,300.59	3,246.16	12.26	13.91	127.62	598.59	-152.66	744.68	720.46	24.22	30.750	
3,500.00	3,489.91	3,397.48	3,341.03	12.64	14.35	127.69	617.50	-158.12	769.41	744.45	24.96	30.828	
3,600.00	3,589.51	3,494.36	3,435.90	13.03	14.80	127.75	636.41	-163.58	794.15	768.45	25.70	30.901	
3,700.00	3,689.11	3,591.25	3,530.77	13.41	15.24	127.81	655.32	-169.04	818.88	792.44	26.44	30.969	
3,800.00	3,788.71	3,688.14	3,625.63	13.79	15.68	127.87	674.23	-174.50	843.62	816.44	27.18	31.033	
3,900.00	3,888.31	3,785.03	3,720.50	14.17	16.13	127.93	693.14	-179.96	868.36	840.43	27.93	31.094	
4,000.00	3,987.91	3,881.92	3,815.37	14.55	16.57	127.98	712.05	-185.42	893.10	864.43	28.67	31.151	
4,100.00	4,087.51	3,978.81	3,910.24	14.93	17.01	128.02	730.96	-190.88	917.84	888.42	29.41	31.205	
4,200.00	4,187.11	4,075.70	4,005.11	15.32	17.46	128.07	749.88	-196.34	942.58	912.42	30.16	31.256	
4,300.00	4,286.71	4,172.59	4,099.98	15.70	17.90	128.11	768.79	-201.80	967.32	936.42	30.90	31.304	
4,400.00	4,386.32	4,269.47	4,194.85	16.08	18.34	128.15	787.70	-207.26	992.06	960.41	31.64	31.350	
4,500.00	4,485.92	4,366.36	4,289.71	16.46	18.79	128.19	806.61	-212.72	1,016.80	984.41	32.39	31.394	
4,600.00	4,585.52	4,463.25	4,384.58	16.84	19.23	128.23	825.52	-218.17	1,041.54	1,008.41	33.13	31.435	
4,700.00	4,685.12	4,560.14	4,479.45	17.23	19.67	128.27	844.43	-223.63	1,066.28	1,032.41	33.88	31.475	
4,759.45	4,744.33	4,617.74	4,535.85	17.45	19.94	128.29	855.67	-226.88	1,080.99	1,046.67	34.32	31.497	
4,800.00	4,784.74	4,657.07	4,574.36	17.61	20.12	128.45	863.35	-229.10	1,090.85	1,056.23	34.62	31.509	
4,900.00	4,884.57	4,754.41	4,669.67	17.98	20.56	128.72	882.34	-234.58	1,113.69	1,078.33	35.36	31.499	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.00	4,984.54	4,852.13	4,765.35	18.33	21.01	128.81	901.42	-240.09	1,134.40	1,098.32	36.08	31.441	
5,015.46	5,000.00	4,867.26	4,780.17	18.38	21.08	2.19	904.37	-240.94	1,137.41	1,101.22	36.19	31.429	
5,100.00	5,084.54	4,950.04	4,861.22	18.65	21.46	1.93	920.53	-245.60	1,153.76	1,116.98	36.78	31.367	
5,200.00	5,184.54	5,047.96	4,957.10	18.98	21.91	1.62	939.64	-251.12	1,173.14	1,135.65	37.48	31.297	
5,300.00	5,284.54	5,145.87	5,052.97	19.30	22.36	1.32	958.75	-256.64	1,192.54	1,154.35	38.19	31.228	
5,400.00	5,384.54	5,243.79	5,148.84	19.63	22.81	1.04	977.86	-262.15	1,211.97	1,173.08	38.89	31.163	
5,500.00	5,484.54	5,341.70	5,244.71	19.95	23.25	0.76	996.97	-267.67	1,231.43	1,191.84	39.60	31.100	
5,600.00	5,584.54	5,439.62	5,340.59	20.28	23.70	0.49	1,016.08	-273.19	1,250.92	1,210.62	40.30	31.039	
5,700.00	5,684.54	5,551.52	5,450.19	20.61	24.21	0.19	1,037.74	-279.44	1,270.33	1,229.22	41.11	30.898	
5,800.00	5,784.54	5,724.38	5,620.74	20.94	24.94	-0.16	1,064.68	-287.22	1,285.94	1,243.65	42.30	30.403	
5,900.00	5,884.54	5,900.06	5,795.48	21.27	25.60	-0.38	1,081.89	-292.19	1,295.76	1,252.43	43.33	29.907	
6,000.00	5,984.54	6,077.30	5,972.55	21.60	26.16	-0.47	1,088.78	-294.18	1,299.66	1,255.48	44.18	29.418	
6,100.00	6,084.54	6,189.30	6,084.54	21.94	26.48	-0.47	1,088.91	-294.21	1,299.73	1,254.87	44.86	28.973	
6,200.00	6,184.54	6,289.30	6,184.54	22.27	26.77	-0.47	1,088.91	-294.21	1,299.73	1,254.21	45.53	28.549	
6,300.00	6,284.54	6,389.30	6,284.54	22.60	27.06	-0.47	1,088.91	-294.21	1,299.73	1,253.54	46.20	28.135	
6,400.00	6,384.54	6,489.30	6,384.54	22.94	27.35	-0.47	1,088.91	-294.21	1,299.73	1,252.87	46.87	27.733	
6,500.00	6,484.54	6,589.30	6,484.54	23.27	27.64	-0.47	1,088.91	-294.21	1,299.73	1,252.19	47.54	27.341	
6,600.00	6,584.54	6,689.30	6,584.54	23.61	27.94	-0.47	1,088.91	-294.21	1,299.73	1,251.52	48.21	26.960	
6,709.26	6,693.80	6,798.56	6,693.80	23.98	28.26	-0.47	1,088.91	-294.21	1,299.73	1,250.79	48.95	26.554	
6,750.00	6,734.52	6,839.28	6,734.52	24.11	28.38	-89.94	1,088.91	-294.21	1,299.73	1,250.51	49.22	26.409	
6,770.62	6,755.08	6,859.84	6,755.08	24.18	28.44	-90.00	1,088.91	-294.21	1,299.73	1,250.38	49.35	26.338	
6,800.00	6,784.30	6,889.06	6,784.30	24.27	28.53	-90.14	1,088.91	-294.21	1,299.73	1,250.20	49.53	26.239	
6,850.00	6,833.64	6,938.39	6,833.64	24.42	28.68	-90.48	1,088.91	-294.21	1,299.78	1,249.93	49.84	26.077	
6,900.00	6,882.29	6,987.65	6,882.89	24.57	28.82	-90.96	1,088.91	-293.96	1,299.92	1,249.78	50.14	25.926	
6,950.00	6,930.03	7,038.22	6,933.36	24.71	28.96	-91.47	1,088.94	-290.83	1,300.18	1,249.76	50.42	25.786	
7,000.00	6,976.62	7,089.70	6,984.37	24.85	29.10	-91.97	1,089.01	-283.99	1,300.54	1,249.85	50.70	25.654	
7,050.00	7,021.83	7,142.12	7,035.67	24.98	29.24	-92.47	1,089.12	-273.29	1,301.01	1,250.04	50.97	25.526	
7,100.00	7,065.44	7,195.52	7,086.98	25.12	29.37	-92.97	1,089.27	-258.55	1,301.57	1,250.33	51.24	25.402	
7,150.00	7,107.25	7,249.93	7,137.99	25.26	29.49	-93.45	1,089.46	-239.65	1,302.21	1,250.69	51.52	25.277	
7,200.00	7,147.03	7,305.38	7,188.35	25.41	29.60	-93.92	1,089.70	-216.46	1,302.92	1,251.11	51.81	25.148	
7,250.00	7,184.61	7,361.89	7,237.66	25.59	29.71	-94.38	1,089.98	-188.90	1,303.70	1,251.56	52.13	25.008	
7,300.00	7,219.80	7,419.46	7,285.50	25.79	29.81	-94.81	1,090.30	-156.91	1,304.51	1,252.01	52.50	24.850	
7,350.00	7,252.42	7,478.09	7,331.42	26.05	29.90	-95.23	1,090.67	-120.49	1,305.35	1,252.43	52.92	24.667	
7,400.00	7,282.33	7,537.77	7,374.95	26.35	29.99	-95.62	1,091.09	-79.69	1,306.19	1,252.77	53.42	24.449	
7,450.00	7,309.37	7,598.45	7,415.57	26.72	30.06	-95.98	1,091.55	-34.63	1,307.02	1,252.99	54.03	24.189	
7,500.00	7,333.40	7,660.10	7,452.79	27.16	30.12	-96.31	1,092.05	14.49	1,307.81	1,253.03	54.78	23.873	
7,550.00	7,354.32	7,722.65	7,486.08	27.66	30.18	-96.61	1,092.58	67.41	1,308.55	1,252.86	55.68	23.499	
7,600.00	7,372.03	7,786.00	7,514.97	28.24	30.23	-96.86	1,093.16	123.77	1,309.20	1,252.44	56.76	23.065	
7,650.00	7,386.43	7,850.07	7,539.01	28.90	30.35	-97.07	1,093.76	183.13	1,309.77	1,251.74	58.02	22.573	
7,700.00	7,397.45	7,914.71	7,557.79	29.62	30.82	-97.24	1,094.39	244.96	1,310.22	1,250.72	59.50	22.022	
7,750.00	7,405.05	7,979.81	7,570.99	30.41	31.69	-97.36	1,095.04	308.68	1,310.55	1,249.39	61.16	21.429	
7,800.00	7,409.18	8,045.21	7,578.37	31.26	32.70	-97.43	1,095.70	373.64	1,310.74	1,247.76	62.99	20.810	
7,834.26	7,410.00	8,090.12	7,579.99	31.86	33.45	-97.45	1,096.15	418.50	1,310.80	1,246.47	64.33	20.376	
7,900.00	7,410.00	8,156.67	7,580.00	33.09	34.67	-97.45	1,096.83	485.06	1,310.80	1,244.04	66.76	19.636	
8,000.00	7,410.00	8,256.67	7,580.00	35.13	36.62	-97.45	1,097.84	585.05	1,310.80	1,240.09	70.71	18.538	
8,100.00	7,410.00	8,356.67	7,580.00	37.32	38.74	-97.45	1,098.86	685.05	1,310.80	1,235.81	74.99	17.479	
8,200.00	7,410.00	8,456.67	7,580.00	39.66	41.00	-97.45	1,099.88	785.04	1,310.80	1,231.24	79.55	16.477	
8,300.00	7,410.00	8,556.67	7,580.00	42.11	43.38	-97.45	1,100.89	885.04	1,310.80	1,226.45	84.35	15.540	
8,400.00	7,410.00	8,656.67	7,580.00	44.66	45.86	-97.45	1,101.91	985.03	1,310.80	1,221.46	89.34	14.672	
8,500.00	7,410.00	8,756.67	7,580.00	47.29	48.43	-97.45	1,102.93	1,085.03	1,310.80	1,216.30	94.50	13.871	
8,600.00	7,410.00	8,856.67	7,580.00	49.98	51.07	-97.45	1,103.94	1,185.02	1,310.80	1,211.01	99.79	13.135	
8,700.00	7,410.00	8,956.67	7,580.00	52.73	53.76	-97.45	1,104.96	1,285.01	1,310.80	1,205.59	105.20	12.460	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3B-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,800.00	7,410.00	9,056.67	7,580.00	55.53	56.52	-97.45	1,105.98	1,385.01	1,310.80	1,200.08	110.72	11.839		
8,900.00	7,410.00	9,156.67	7,580.00	58.37	59.31	-97.45	1,106.99	1,485.00	1,310.80	1,194.48	116.32	11.269		
9,000.00	7,410.00	9,256.67	7,580.00	61.25	62.15	-97.45	1,108.01	1,585.00	1,310.80	1,188.80	121.99	10.745		
9,100.00	7,410.00	9,356.67	7,580.00	64.16	65.02	-97.45	1,109.02	1,684.99	1,310.80	1,183.06	127.73	10.262		
9,200.00	7,410.00	9,456.67	7,580.00	67.10	67.92	-97.45	1,110.04	1,784.99	1,310.80	1,177.27	133.53	9.816		
9,300.00	7,410.00	9,556.67	7,580.00	70.06	70.85	-97.45	1,111.06	1,884.98	1,310.80	1,171.42	139.38	9.405		
9,400.00	7,410.00	9,656.67	7,580.00	73.04	73.80	-97.45	1,112.07	1,984.98	1,310.80	1,165.53	145.26	9.024		
9,500.00	7,410.00	9,756.67	7,580.00	76.04	76.77	-97.45	1,113.09	2,084.97	1,310.80	1,159.61	151.19	8.670		
9,600.00	7,410.00	9,856.67	7,580.00	79.06	79.76	-97.45	1,114.11	2,184.97	1,310.80	1,153.64	157.15	8.341		
9,700.00	7,410.00	9,956.67	7,580.00	82.09	82.76	-97.45	1,115.12	2,284.96	1,310.80	1,147.65	163.14	8.035		
9,800.00	7,410.00	10,056.67	7,580.00	85.13	85.78	-97.45	1,116.14	2,384.96	1,310.80	1,141.64	169.16	7.749		
9,900.00	7,410.00	10,156.67	7,580.00	88.18	88.82	-97.45	1,117.15	2,484.95	1,310.80	1,135.59	175.20	7.482		
10,000.00	7,410.00	10,256.67	7,580.00	91.25	91.86	-97.45	1,118.17	2,584.95	1,310.80	1,129.53	181.27	7.231		
10,100.00	7,410.00	10,356.67	7,580.00	94.32	94.91	-97.45	1,119.19	2,684.94	1,310.80	1,123.44	187.35	6.996		
10,200.00	7,410.00	10,456.67	7,580.00	97.40	97.98	-97.45	1,120.20	2,784.94	1,310.80	1,117.34	193.45	6.776		
10,300.00	7,410.00	10,556.67	7,580.00	100.50	101.05	-97.45	1,121.22	2,884.93	1,310.80	1,111.23	199.57	6.568		
10,400.00	7,410.00	10,656.67	7,580.00	103.59	104.13	-97.45	1,122.24	2,984.93	1,310.80	1,105.09	205.70	6.372		
10,500.00	7,410.00	10,756.67	7,580.00	106.70	107.22	-97.45	1,123.25	3,084.92	1,310.80	1,098.95	211.85	6.187		
10,600.00	7,410.00	10,856.67	7,580.00	109.81	110.32	-97.45	1,124.27	3,184.92	1,310.80	1,092.79	218.01	6.013		
10,700.00	7,410.00	10,956.67	7,580.00	112.92	113.42	-97.45	1,125.28	3,284.91	1,310.80	1,086.62	224.18	5.847		
10,800.00	7,410.00	11,056.67	7,580.00	116.04	116.53	-97.45	1,126.30	3,384.91	1,310.80	1,080.44	230.36	5.690		
10,900.00	7,410.00	11,156.67	7,580.00	119.17	119.64	-97.45	1,127.32	3,484.90	1,310.79	1,074.25	236.55	5.541		
11,000.00	7,410.00	11,256.67	7,580.00	122.30	122.76	-97.45	1,128.33	3,584.90	1,310.79	1,068.05	242.74	5.400		
11,100.00	7,410.00	11,356.67	7,580.00	125.43	125.88	-97.45	1,129.35	3,684.89	1,310.79	1,061.84	248.95	5.265		
11,200.00	7,410.00	11,456.67	7,580.00	128.57	129.00	-97.45	1,130.37	3,784.89	1,310.79	1,055.63	255.17	5.137		
11,300.00	7,410.00	11,556.67	7,580.00	131.71	132.13	-97.45	1,131.38	3,884.88	1,310.79	1,049.41	261.39	5.015		
11,400.00	7,410.00	11,656.67	7,580.00	134.85	135.27	-97.45	1,132.40	3,984.88	1,310.79	1,043.18	267.61	4.898		
11,500.00	7,410.00	11,756.67	7,580.00	138.00	138.40	-97.45	1,133.41	4,084.87	1,310.79	1,036.95	273.85	4.787		
11,600.00	7,410.00	11,856.67	7,580.00	141.14	141.54	-97.45	1,134.43	4,184.87	1,310.79	1,030.71	280.09	4.680		
11,700.00	7,410.00	11,956.67	7,580.00	144.30	144.69	-97.45	1,135.45	4,284.86	1,310.79	1,024.46	286.33	4.578		
11,800.00	7,410.00	12,056.67	7,580.00	147.45	147.83	-97.45	1,136.46	4,384.85	1,310.79	1,018.21	292.58	4.480		
11,906.34	7,410.00	12,163.02	7,580.00	150.80	151.18	-97.45	1,137.54	4,491.19	1,310.79	1,011.56	299.23	4.380 SF		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	0.04	60.11	0.04	60.11					
100.00	100.00	100.00	100.00	0.14	0.14	0.04	60.11	0.04	60.11	59.84	0.28	217.779		
200.00	200.00	200.00	200.00	0.50	0.50	0.04	60.11	0.04	60.11	59.12	0.99	60.538		
300.00	300.00	300.00	300.00	0.85	0.85	0.04	60.11	0.04	60.11	58.40	1.71	35.155		
400.00	400.00	400.00	400.00	1.21	1.21	0.04	60.11	0.04	60.11	57.69	2.43	24.770 CC, ES		
500.00	500.00	498.00	497.98	1.57	1.57	-0.44	61.71	-0.47	61.74	58.59	3.16	19.565		
600.00	600.00	595.78	595.62	1.93	1.92	-1.72	66.48	-1.99	66.66	62.75	3.90	17.072		
700.00	700.00	693.10	692.58	2.29	2.27	-3.48	74.38	-4.52	74.89	70.23	4.66	16.077		
800.00	800.00	789.74	788.54	2.65	2.63	-5.37	85.33	-8.02	86.47	81.06	5.41	15.987		
900.00	899.98	885.39	883.07	2.99	2.99	120.02	99.19	-12.44	102.24	96.11	6.14	16.656		
1,000.00	999.84	981.26	977.34	3.33	3.38	120.13	115.81	-17.76	122.67	115.84	6.83	17.964		
1,056.01	1,055.67	1,035.84	1,030.95	3.52	3.60	120.65	125.55	-20.87	135.16	127.95	7.21	18.758		
1,100.00	1,099.48	1,078.64	1,072.99	3.67	3.78	121.29	133.18	-23.31	145.20	137.70	7.50	19.353		
1,200.00	1,199.08	1,175.94	1,168.57	4.03	4.18	122.47	150.54	-28.85	168.08	159.90	8.19	20.535		
1,300.00	1,298.69	1,273.23	1,264.14	4.38	4.59	123.36	167.90	-34.40	191.01	182.14	8.88	21.516		
1,400.00	1,398.29	1,370.53	1,359.72	4.74	5.01	124.06	185.26	-39.95	213.98	204.40	9.58	22.339		
1,500.00	1,497.89	1,467.83	1,455.30	5.11	5.42	124.63	202.62	-45.49	236.97	226.69	10.29	23.038		
1,600.00	1,597.49	1,565.12	1,550.87	5.48	5.84	125.10	219.97	-51.04	259.98	248.98	11.00	23.637		
1,700.00	1,697.09	1,662.42	1,646.45	5.85	6.26	125.49	237.33	-56.58	283.00	271.29	11.72	24.155		
1,800.00	1,796.69	1,759.72	1,742.02	6.22	6.69	125.82	254.69	-62.13	306.04	293.60	12.44	24.608		
1,900.00	1,896.29	1,857.02	1,837.60	6.59	7.11	126.10	272.05	-67.68	329.08	315.92	13.16	25.005		
2,000.00	1,995.89	1,954.31	1,933.17	6.96	7.54	126.35	289.41	-73.22	352.13	338.24	13.89	25.358		
2,100.00	2,095.49	2,051.61	2,028.75	7.34	7.96	126.57	306.77	-78.77	375.18	360.57	14.61	25.671		
2,200.00	2,195.09	2,148.91	2,124.32	7.71	8.39	126.76	324.13	-84.32	398.24	382.90	15.34	25.953		
2,300.00	2,294.70	2,246.20	2,219.90	8.09	8.82	126.93	341.48	-89.86	421.30	405.23	16.08	26.206		
2,400.00	2,394.30	2,343.50	2,315.47	8.47	9.24	127.09	358.84	-95.41	444.37	427.56	16.81	26.435		
2,500.00	2,493.90	2,440.80	2,411.05	8.85	9.67	127.22	376.20	-100.96	467.44	449.89	17.54	26.644		
2,600.00	2,593.50	2,538.10	2,506.62	9.22	10.10	127.35	393.56	-106.50	490.51	472.23	18.28	26.834		
2,700.00	2,693.10	2,635.39	2,602.20	9.60	10.53	127.46	410.92	-112.05	513.58	494.56	19.02	27.009		
2,800.00	2,792.70	2,732.69	2,697.77	9.98	10.96	127.57	428.28	-117.59	536.65	516.90	19.75	27.169		
2,900.00	2,892.30	2,829.99	2,793.35	10.36	11.39	127.66	445.64	-123.14	559.73	539.24	20.49	27.317		
3,000.00	2,991.90	2,927.28	2,888.92	10.74	11.82	127.75	462.99	-128.69	582.81	561.58	21.23	27.454		
3,100.00	3,091.50	3,024.58	2,984.50	11.12	12.25	127.83	480.35	-134.23	605.88	583.92	21.97	27.581		
3,200.00	3,191.10	3,121.88	3,080.08	11.50	12.68	127.91	497.71	-139.78	628.96	606.26	22.71	27.699		
3,300.00	3,290.71	3,219.17	3,175.65	11.88	13.11	127.98	515.07	-145.33	652.04	628.60	23.45	27.809		
3,400.00	3,390.31	3,316.47	3,271.23	12.26	13.54	128.04	532.43	-150.87	675.12	650.94	24.19	27.912		
3,500.00	3,489.91	3,413.77	3,366.80	12.64	13.97	128.10	549.79	-156.42	698.21	673.28	24.93	28.009		
3,600.00	3,589.51	3,511.07	3,462.38	13.03	14.40	128.16	567.15	-161.97	721.29	695.62	25.67	28.099		
3,700.00	3,689.11	3,608.36	3,557.95	13.41	14.83	128.21	584.50	-167.51	744.37	717.96	26.41	28.185		
3,800.00	3,788.71	3,705.66	3,653.53	13.79	15.26	128.26	601.86	-173.06	767.46	740.30	27.15	28.265		
3,900.00	3,888.31	3,802.96	3,749.10	14.17	15.69	128.31	619.22	-178.60	790.54	762.65	27.89	28.340		
4,000.00	3,987.91	3,900.25	3,844.68	14.55	16.12	128.36	636.58	-184.15	813.63	784.99	28.64	28.412		
4,100.00	4,087.51	3,997.55	3,940.25	14.93	16.56	128.40	653.94	-189.70	836.71	807.33	29.38	28.479		
4,200.00	4,187.11	4,094.85	4,035.83	15.32	16.99	128.44	671.30	-195.24	859.80	829.67	30.12	28.543		
4,300.00	4,286.71	4,192.15	4,131.40	15.70	17.42	128.48	688.65	-200.79	882.88	852.02	30.87	28.604		
4,400.00	4,386.32	4,289.44	4,226.98	16.08	17.85	128.51	706.01	-206.34	905.97	874.36	31.61	28.662		
4,500.00	4,485.92	4,386.74	4,322.55	16.46	18.28	128.55	723.37	-211.88	929.06	896.70	32.35	28.717		
4,600.00	4,585.52	4,484.04	4,418.13	16.84	18.71	128.58	740.73	-217.43	952.14	919.05	33.10	28.769		
4,700.00	4,685.12	4,581.33	4,513.70	17.23	19.14	128.61	758.09	-222.98	975.23	941.39	33.84	28.819		
4,759.45	4,744.33	4,639.18	4,570.53	17.45	19.40	128.63	768.41	-226.27	988.96	954.67	34.28	28.848		
4,800.00	4,784.74	4,678.67	4,609.32	17.61	19.58	128.77	775.45	-228.52	998.14	963.56	34.58	28.863		
4,900.00	4,884.57	4,776.38	4,705.30	17.98	20.01	129.00	792.89	-234.09	1,019.30	983.98	35.32	28.862		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft			
Survey Program: 0-MWD+HDGM															Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning			
5,000.00	4,984.54	4,874.44	4,801.63	18.33	20.45	129.04	810.38	-239.68	1,038.32	1,002.28	36.04	28.810				
5,015.46	5,000.00	4,889.63	4,816.54	18.38	20.51	2.41	813.09	-240.55	1,041.07	1,004.92	36.15	28.799				
5,100.00	5,084.54	4,972.67	4,898.12	18.65	20.88	2.11	827.91	-245.28	1,055.98	1,019.24	36.74	28.741				
5,200.00	5,184.54	5,070.90	4,994.61	18.98	21.32	1.78	845.43	-250.88	1,073.65	1,036.21	37.44	28.675				
5,300.00	5,284.54	5,169.13	5,091.10	19.30	21.75	1.45	862.96	-256.48	1,091.36	1,053.22	38.14	28.611				
5,400.00	5,384.54	5,267.36	5,187.59	19.63	22.19	1.13	880.48	-262.08	1,109.10	1,070.25	38.85	28.550				
5,500.00	5,484.54	5,365.59	5,284.09	19.95	22.63	0.82	898.01	-267.68	1,126.87	1,087.32	39.55	28.492				
5,600.00	5,584.54	5,463.82	5,380.58	20.28	23.06	0.53	915.53	-273.28	1,144.68	1,104.42	40.25	28.436				
5,700.00	5,684.54	5,570.80	5,485.68	20.61	23.53	0.21	934.53	-279.35	1,162.46	1,121.43	41.03	28.334				
5,800.00	5,784.54	5,732.67	5,645.66	20.94	24.20	-0.16	957.92	-286.82	1,176.92	1,134.78	42.15	27.925				
5,900.00	5,884.54	5,896.86	5,809.07	21.27	24.81	-0.38	972.80	-291.58	1,186.02	1,142.88	43.13	27.496				
6,000.00	5,984.54	6,062.31	5,974.38	21.60	25.35	-0.47	978.76	-293.48	1,189.63	1,145.65	43.97	27.053				
6,100.00	6,084.54	6,172.47	6,084.54	21.94	25.68	-0.48	978.87	-293.52	1,189.69	1,145.04	44.66	26.640				
6,200.00	6,184.54	6,272.47	6,184.54	22.27	25.97	-0.48	978.87	-293.52	1,189.69	1,144.36	45.33	26.246				
6,300.00	6,284.54	6,372.47	6,284.54	22.60	26.27	-0.48	978.87	-293.52	1,189.69	1,143.69	46.00	25.862				
6,400.00	6,384.54	6,472.47	6,384.54	22.94	26.57	-0.48	978.87	-293.52	1,189.69	1,143.02	46.67	25.489				
6,500.00	6,484.54	6,572.47	6,484.54	23.27	26.88	-0.48	978.87	-293.52	1,189.69	1,142.34	47.35	25.126				
6,600.00	6,584.54	6,672.47	6,584.54	23.61	27.18	-0.48	978.87	-293.52	1,189.69	1,141.67	48.03	24.772				
6,610.20	6,594.74	6,682.66	6,594.74	23.64	27.21	-0.48	978.87	-293.52	1,189.69	1,141.60	48.09	24.736				
6,709.26	6,693.80	6,781.28	6,693.25	23.98	27.50	-0.31	978.91	-290.14	1,189.70	1,140.95	48.75	24.402				
6,750.00	6,734.52	6,821.40	6,733.05	24.11	27.61	-89.54	978.96	-285.14	1,189.73	1,140.71	49.02	24.273				
6,800.00	6,784.30	6,870.35	6,781.13	24.27	27.74	-89.31	979.05	-276.03	1,189.78	1,140.45	49.32	24.121				
6,850.00	6,833.64	6,919.00	6,828.19	24.42	27.86	-89.09	979.18	-263.74	1,189.85	1,140.22	49.63	23.977				
6,900.00	6,882.29	6,967.34	6,874.02	24.57	27.97	-88.87	979.33	-248.39	1,189.93	1,140.01	49.92	23.837				
6,950.00	6,930.03	7,015.40	6,918.46	24.71	28.08	-88.66	979.52	-230.10	1,190.03	1,139.82	50.21	23.702				
7,000.00	6,976.62	7,063.20	6,961.33	24.85	28.18	-88.45	979.74	-209.00	1,190.14	1,139.64	50.50	23.568				
7,050.00	7,021.83	7,110.73	7,002.48	24.98	28.27	-88.25	979.98	-185.23	1,190.26	1,139.47	50.79	23.434				
7,100.00	7,065.44	7,158.02	7,041.77	25.12	28.35	-88.06	980.25	-158.91	1,190.39	1,139.29	51.10	23.295				
7,150.00	7,107.25	7,205.09	7,079.06	25.26	28.43	-87.88	980.55	-130.21	1,190.53	1,139.09	51.43	23.146				
7,200.00	7,147.03	7,251.95	7,114.23	25.41	28.50	-87.70	980.86	-99.27	1,190.67	1,138.87	51.80	22.985				
7,250.00	7,184.61	7,300.00	7,148.12	25.59	28.56	-87.54	981.21	-65.21	1,190.81	1,138.58	52.23	22.801				
7,300.00	7,219.80	7,345.08	7,177.77	25.79	28.62	-87.39	981.56	-31.27	1,190.95	1,138.24	52.70	22.597				
7,350.00	7,252.42	7,391.39	7,205.95	26.05	28.67	-87.26	981.94	5.47	1,191.09	1,137.82	53.27	22.360				
7,400.00	7,282.33	7,437.56	7,231.61	26.35	28.72	-87.13	982.33	43.84	1,191.22	1,137.29	53.92	22.090				
7,450.00	7,309.37	7,483.59	7,254.69	26.72	28.78	-87.02	982.74	83.65	1,191.34	1,136.65	54.69	21.785				
7,500.00	7,333.40	7,529.50	7,275.11	27.16	28.86	-86.92	983.16	124.76	1,191.45	1,135.88	55.57	21.442				
7,550.00	7,354.32	7,575.31	7,292.82	27.66	29.05	-86.84	983.59	167.00	1,191.55	1,134.98	56.57	21.063				
7,600.00	7,372.03	7,621.04	7,307.77	28.24	29.45	-86.77	984.03	210.21	1,191.63	1,133.93	57.70	20.651				
7,650.00	7,386.43	7,666.70	7,319.91	28.90	30.01	-86.71	984.48	254.21	1,191.70	1,132.74	58.96	20.211				
7,700.00	7,397.45	7,712.30	7,329.22	29.62	30.65	-86.67	984.94	298.85	1,191.75	1,131.41	60.35	19.749				
7,750.00	7,405.05	7,757.87	7,335.66	30.41	31.36	-86.64	985.40	343.95	1,191.79	1,129.94	61.84	19.271				
7,800.00	7,409.18	7,803.42	7,339.23	31.26	32.11	-86.63	985.87	389.35	1,191.81	1,128.36	63.44	18.786				
7,834.26	7,410.00	7,834.63	7,340.00	31.86	32.65	-86.63	986.19	420.55	1,191.81	1,127.22	64.59	18.452				
7,834.76	7,410.00	7,835.09	7,340.00	31.87	32.66	-86.63	986.19	421.00	1,191.81	1,127.20	64.61	18.447				
7,900.00	7,410.00	7,900.17	7,340.00	33.09	33.86	-86.63	986.86	486.08	1,191.81	1,124.80	67.01	17.785				
8,000.00	7,410.00	8,000.17	7,340.00	35.13	35.85	-86.63	987.88	586.07	1,191.82	1,120.79	71.03	16.779				
8,100.00	7,410.00	8,100.17	7,340.00	37.32	38.02	-86.63	988.91	686.07	1,191.83	1,116.45	75.37	15.812				
8,200.00	7,410.00	8,200.17	7,340.00	39.66	40.32	-86.63	989.93	786.06	1,191.84	1,111.84	80.00	14.899				
8,300.00	7,410.00	8,300.17	7,340.00	42.11	42.74	-86.63	990.96	886.06	1,191.84	1,106.99	84.85	14.046				
8,400.00	7,410.00	8,400.17	7,340.00	44.66	45.25	-86.63	991.98	986.05	1,191.85	1,101.95	89.90	13.258				
8,500.00	7,410.00	8,500.17	7,340.00	47.29	47.85	-86.63	993.01	1,086.05	1,191.86	1,096.75	95.11	12.531				
8,600.00	7,410.00	8,600.17	7,340.00	49.98	50.52	-86.63	994.03	1,186.04	1,191.87	1,091.41	100.46	11.864				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3C-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,700.00	7,410.00	8,700.17	7,340.00	52.73	53.24	-86.63	995.05	1,286.03	1,191.88	1,085.95	105.92	11.252		
8,800.00	7,410.00	8,800.17	7,340.00	55.53	56.02	-86.63	996.08	1,386.03	1,191.88	1,080.39	111.49	10.690		
8,900.00	7,410.00	8,900.17	7,340.00	58.37	58.84	-86.63	997.10	1,486.02	1,191.89	1,074.75	117.14	10.175		
9,000.00	7,410.00	9,000.17	7,340.00	61.25	61.70	-86.63	998.13	1,586.02	1,191.90	1,069.03	122.87	9.701		
9,100.00	7,410.00	9,100.17	7,340.00	64.16	64.59	-86.63	999.15	1,686.01	1,191.91	1,063.25	128.66	9.264		
9,200.00	7,410.00	9,200.17	7,340.00	67.10	67.51	-86.63	1,000.18	1,786.01	1,191.92	1,057.42	134.50	8.862		
9,300.00	7,410.00	9,300.17	7,340.00	70.06	70.45	-86.63	1,001.20	1,886.00	1,191.92	1,051.53	140.39	8.490		
9,400.00	7,410.00	9,400.17	7,340.00	73.04	73.42	-86.63	1,002.23	1,986.00	1,191.93	1,045.60	146.33	8.146		
9,500.00	7,410.00	9,500.17	7,340.00	76.04	76.40	-86.63	1,003.25	2,085.99	1,191.94	1,039.64	152.30	7.826		
9,600.00	7,410.00	9,600.17	7,340.00	79.06	79.41	-86.63	1,004.27	2,185.99	1,191.95	1,033.64	158.31	7.529		
9,700.00	7,410.00	9,700.17	7,340.00	82.09	82.42	-86.63	1,005.30	2,285.98	1,191.96	1,027.61	164.35	7.253		
9,800.00	7,410.00	9,800.17	7,340.00	85.13	85.46	-86.63	1,006.32	2,385.98	1,191.96	1,021.55	170.41	6.995		
9,900.00	7,410.00	9,900.17	7,340.00	88.18	88.50	-86.63	1,007.35	2,485.97	1,191.97	1,015.47	176.50	6.753		
10,000.00	7,410.00	10,000.17	7,340.00	91.25	91.55	-86.63	1,008.37	2,585.97	1,191.98	1,009.37	182.61	6.527		
10,100.00	7,410.00	10,100.17	7,340.00	94.32	94.62	-86.63	1,009.40	2,685.96	1,191.99	1,003.25	188.74	6.316		
10,200.00	7,410.00	10,200.17	7,340.00	97.40	97.69	-86.63	1,010.42	2,785.96	1,192.00	997.11	194.89	6.116		
10,300.00	7,410.00	10,300.17	7,340.00	100.50	100.77	-86.63	1,011.45	2,885.95	1,192.00	990.96	201.05	5.929		
10,400.00	7,410.00	10,400.17	7,340.00	103.59	103.86	-86.63	1,012.47	2,985.95	1,192.01	984.79	207.23	5.752		
10,500.00	7,410.00	10,500.17	7,340.00	106.70	106.96	-86.63	1,013.49	3,085.94	1,192.02	978.60	213.42	5.585		
10,600.00	7,410.00	10,600.17	7,340.00	109.81	110.06	-86.63	1,014.52	3,185.93	1,192.03	972.41	219.62	5.428		
10,700.00	7,410.00	10,700.17	7,340.00	112.92	113.17	-86.63	1,015.54	3,285.93	1,192.04	966.20	225.83	5.278		
10,800.00	7,410.00	10,800.17	7,340.00	116.04	116.29	-86.63	1,016.57	3,385.92	1,192.04	959.99	232.06	5.137		
10,900.00	7,410.00	10,900.17	7,340.00	119.17	119.40	-86.63	1,017.59	3,485.92	1,192.05	953.76	238.29	5.003		
11,000.00	7,410.00	11,000.17	7,340.00	122.30	122.53	-86.63	1,018.62	3,585.91	1,192.06	947.53	244.53	4.875		
11,100.00	7,410.00	11,100.17	7,340.00	125.43	125.65	-86.63	1,019.64	3,685.91	1,192.07	941.29	250.78	4.753		
11,200.00	7,410.00	11,200.17	7,340.00	128.57	128.79	-86.63	1,020.67	3,785.90	1,192.08	935.04	257.04	4.638		
11,300.00	7,410.00	11,300.17	7,340.00	131.71	131.92	-86.63	1,021.69	3,885.90	1,192.08	928.78	263.31	4.527		
11,400.00	7,410.00	11,400.17	7,340.00	134.85	135.06	-86.63	1,022.71	3,985.89	1,192.09	922.52	269.58	4.422		
11,500.00	7,410.00	11,500.17	7,340.00	138.00	138.20	-86.63	1,023.74	4,085.89	1,192.10	916.25	275.85	4.321		
11,600.00	7,410.00	11,600.17	7,340.00	141.14	141.34	-86.63	1,024.76	4,185.88	1,192.11	909.97	282.14	4.225		
11,700.00	7,410.00	11,700.17	7,340.00	144.30	144.49	-86.63	1,025.79	4,285.88	1,192.12	903.69	288.43	4.133		
11,800.00	7,410.00	11,800.17	7,340.00	147.45	147.64	-86.63	1,026.81	4,385.87	1,192.12	897.41	294.72	4.045		
11,906.34	7,410.00	11,906.51	7,340.00	150.80	150.99	-86.63	1,027.90	4,492.21	1,192.13	890.72	301.42	3.955 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
0.00	0.00	0.00	0.00	0.00	0.00	0.15	49.92	0.13	49.92					
100.00	100.00	100.00	100.00	0.14	0.14	0.15	49.92	0.13	49.92	49.64	0.28	180.844		
200.00	200.00	200.00	200.00	0.50	0.50	0.15	49.92	0.13	49.92	48.92	0.99	50.271		
300.00	300.00	300.00	300.00	0.85	0.85	0.15	49.92	0.13	49.92	48.21	1.71	29.193		
400.00	400.00	400.00	400.00	1.21	1.21	0.15	49.92	0.13	49.92	47.49	2.43	20.569		
500.00	500.00	500.00	500.00	1.57	1.57	0.15	49.92	0.13	49.92	46.77	3.14	15.878	CC, ES	
600.00	600.00	598.38	598.36	1.93	1.92	-0.57	51.48	-0.51	51.51	47.64	3.87	13.315		
700.00	700.00	696.52	696.37	2.29	2.28	-2.48	56.15	-2.43	56.32	51.71	4.61	12.222		
800.00	800.00	794.21	793.69	2.65	2.63	-5.02	63.88	-5.61	64.43	59.08	5.35	12.038		
900.00	899.98	891.14	889.92	2.99	2.99	119.88	74.57	-10.01	76.76	70.68	6.08	12.624		
1,000.00	999.84	988.68	988.41	3.33	3.36	119.94	87.82	-15.46	93.48	86.71	6.77	13.803		
1,056.01	1,055.67	1,043.72	1,040.83	3.52	3.57	120.62	95.43	-18.59	103.75	96.60	7.15	14.506		
1,100.00	1,099.48	1,086.90	1,083.52	3.67	3.74	121.38	101.40	-21.04	112.05	104.59	7.46	15.029		
1,200.00	1,199.08	1,185.05	1,180.57	4.03	4.12	122.74	114.98	-26.62	130.97	122.82	8.15	16.073		
1,300.00	1,298.69	1,283.20	1,277.62	4.38	4.51	123.76	128.55	-32.21	149.95	141.10	8.85	16.945		
1,400.00	1,398.29	1,381.35	1,374.67	4.74	4.90	124.55	142.12	-37.79	168.96	159.40	9.56	17.681		
1,500.00	1,497.89	1,479.51	1,471.72	5.11	5.30	125.19	155.69	-43.37	187.99	177.72	10.27	18.307		
1,600.00	1,597.49	1,577.66	1,568.77	5.48	5.69	125.70	169.26	-48.95	207.04	196.06	10.99	18.847		
1,700.00	1,697.09	1,675.81	1,665.82	5.85	6.09	126.13	182.84	-54.53	226.11	214.41	11.71	19.316		
1,800.00	1,796.69	1,773.97	1,762.87	6.22	6.49	126.49	196.41	-60.11	245.19	232.76	12.43	19.726		
1,900.00	1,896.29	1,872.12	1,859.92	6.59	6.89	126.80	209.98	-65.69	264.27	251.12	13.16	20.089		
2,000.00	1,995.89	1,970.27	1,956.96	6.96	7.29	127.07	223.55	-71.27	283.37	269.48	13.88	20.411		
2,100.00	2,095.49	2,068.42	2,054.01	7.34	7.69	127.30	237.13	-76.86	302.46	287.85	14.61	20.698		
2,200.00	2,195.09	2,166.58	2,151.06	7.71	8.09	127.51	250.70	-82.44	321.56	306.22	15.34	20.957		
2,300.00	2,294.70	2,264.73	2,248.11	8.09	8.50	127.69	264.27	-88.02	340.67	324.59	16.08	21.191		
2,400.00	2,394.30	2,362.88	2,345.16	8.47	8.90	127.85	277.84	-93.60	359.77	342.97	16.81	21.403		
2,500.00	2,493.90	2,461.03	2,442.21	8.85	9.30	128.00	291.42	-99.18	378.88	361.34	17.54	21.597		
2,600.00	2,593.50	2,559.19	2,539.26	9.22	9.70	128.13	304.99	-104.76	398.00	379.72	18.28	21.774		
2,700.00	2,693.10	2,657.34	2,636.31	9.60	10.11	128.25	318.56	-110.34	417.11	398.10	19.01	21.936		
2,800.00	2,792.70	2,755.49	2,733.36	9.98	10.51	128.36	332.13	-115.92	436.23	416.48	19.75	22.086		
2,900.00	2,892.30	2,853.64	2,830.41	10.36	10.92	128.47	345.71	-121.51	455.34	434.86	20.49	22.225		
3,000.00	2,991.90	2,951.80	2,927.46	10.74	11.32	128.56	359.28	-127.09	474.46	453.24	21.23	22.353		
3,100.00	3,091.50	3,049.95	3,024.51	11.12	11.73	128.64	372.85	-132.67	493.58	471.62	21.96	22.472		
3,200.00	3,191.10	3,148.10	3,121.56	11.50	12.13	128.72	386.42	-138.25	512.70	490.00	22.70	22.583		
3,300.00	3,290.71	3,246.25	3,218.61	11.88	12.53	128.80	400.00	-143.83	531.82	508.38	23.44	22.687		
3,400.00	3,390.31	3,344.41	3,315.66	12.26	12.94	128.87	413.57	-149.41	550.95	526.77	24.18	22.784		
3,500.00	3,489.91	3,442.56	3,412.70	12.64	13.34	128.93	427.14	-154.99	570.07	545.15	24.92	22.876		
3,600.00	3,589.51	3,540.71	3,509.75	13.03	13.75	128.99	440.71	-160.57	589.19	563.53	25.66	22.961		
3,700.00	3,689.11	3,638.87	3,606.80	13.41	14.16	129.04	454.29	-166.16	608.32	581.92	26.40	23.042		
3,800.00	3,788.71	3,737.02	3,703.85	13.79	14.56	129.10	467.86	-171.74	627.44	600.30	27.14	23.118		
3,900.00	3,888.31	3,835.17	3,800.90	14.17	14.97	129.15	481.43	-177.32	646.57	618.68	27.88	23.190		
4,000.00	3,987.91	3,933.32	3,897.95	14.55	15.37	129.19	495.00	-182.90	665.69	637.07	28.62	23.258		
4,100.00	4,087.51	4,031.48	3,995.00	14.93	15.78	129.24	508.58	-188.48	684.82	655.45	29.36	23.322		
4,200.00	4,187.11	4,129.63	4,092.05	15.32	16.18	129.28	522.15	-194.06	703.94	673.84	30.10	23.383		
4,300.00	4,286.71	4,227.78	4,189.10	15.70	16.59	129.32	535.72	-199.64	723.07	692.22	30.85	23.441		
4,400.00	4,386.32	4,325.93	4,286.15	16.08	16.99	129.36	549.29	-205.22	742.20	710.61	31.59	23.497		
4,500.00	4,485.92	4,424.09	4,383.20	16.46	17.40	129.39	562.87	-210.81	761.32	729.00	32.33	23.549		
4,600.00	4,585.52	4,522.24	4,480.25	16.84	17.81	129.42	576.44	-216.39	780.45	747.38	33.07	23.599		
4,700.00	4,685.12	4,620.39	4,577.30	17.23	18.21	129.46	590.01	-221.97	799.58	765.77	33.81	23.647		
4,759.45	4,744.33	4,678.74	4,634.99	17.45	18.45	129.48	598.08	-225.29	810.95	776.70	34.25	23.675		
4,800.00	4,784.74	4,718.58	4,674.38	17.61	18.62	129.59	603.59	-227.55	818.53	783.97	34.55	23.688		
4,900.00	4,884.57	4,817.07	4,771.77	17.98	19.03	129.72	617.21	-233.15	835.68	800.39	35.29	23.682		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,000.00	4,984.54	4,915.83	4,869.42	18.33	19.44	129.63	630.86	-238.77	850.64	814.63	36.01	23.623		
5,015.46	5,000.00	4,931.12	4,884.53	18.38	19.50	2.98	632.98	-239.64	852.76	816.64	36.12	23.610		
5,100.00	5,084.54	5,014.71	4,967.18	18.65	19.84	2.63	644.54	-244.39	864.22	827.51	36.71	23.543		
5,200.00	5,184.54	5,113.58	5,064.95	18.98	20.25	2.22	658.21	-250.01	877.82	840.42	37.41	23.466		
5,300.00	5,284.54	5,212.46	5,162.71	19.30	20.66	1.82	671.88	-255.64	891.47	853.36	38.11	23.393		
5,400.00	5,384.54	5,311.34	5,260.47	19.63	21.07	1.43	685.55	-261.26	905.16	866.35	38.81	23.323		
5,500.00	5,484.54	5,410.21	5,358.24	19.95	21.48	1.05	699.23	-266.88	918.88	879.37	39.51	23.257		
5,600.00	5,584.54	5,509.09	5,456.00	20.28	21.89	0.69	712.90	-272.50	932.65	892.43	40.21	23.193		
5,700.00	5,684.54	5,607.96	5,553.77	20.61	22.30	0.34	726.57	-278.12	946.45	905.53	40.91	23.132		
5,800.00	5,784.54	5,743.15	5,687.76	20.94	22.84	-0.08	743.07	-284.91	958.75	916.88	41.87	22.900		
5,900.00	5,884.54	5,887.88	5,831.97	21.27	23.38	-0.35	754.30	-289.53	966.52	923.73	42.79	22.587		
6,000.00	5,984.54	6,033.47	5,977.46	21.60	23.87	-0.46	758.78	-291.37	969.61	926.00	43.61	22.235		
6,100.00	6,084.54	6,140.55	6,084.54	21.94	24.21	-0.46	758.86	-291.40	969.67	925.37	44.30	21.890		
6,200.00	6,184.54	6,240.55	6,184.54	22.27	24.52	-0.46	758.86	-291.40	969.67	924.69	44.97	21.561		
6,300.00	6,284.54	6,340.55	6,284.54	22.60	24.84	-0.46	758.86	-291.40	969.67	924.01	45.65	21.240		
6,400.00	6,384.54	6,440.55	6,384.54	22.94	25.16	-0.46	758.86	-291.40	969.67	923.33	46.33	20.928		
6,500.00	6,484.54	6,540.55	6,484.54	23.27	25.48	-0.46	758.86	-291.40	969.67	922.65	47.01	20.625		
6,600.00	6,584.54	6,640.55	6,584.54	23.61	25.80	-0.46	758.86	-291.40	969.67	921.97	47.70	20.330		
6,709.26	6,693.80	6,749.81	6,693.80	23.98	26.15	-0.46	758.86	-291.40	969.67	921.23	48.44	20.017		
6,750.00	6,734.52	6,790.43	6,734.40	24.11	26.28	-89.88	758.87	-290.25	969.67	920.96	48.71	19.907		
6,800.00	6,784.30	6,840.28	6,784.03	24.27	26.42	-89.88	758.92	-285.70	969.67	920.64	49.02	19.779		
6,850.00	6,833.64	6,890.13	6,833.22	24.42	26.56	-89.88	759.00	-277.70	969.67	920.34	49.33	19.658		
6,900.00	6,882.29	6,939.98	6,881.75	24.57	26.70	-89.88	759.11	-266.30	969.67	920.05	49.62	19.542		
6,950.00	6,930.03	6,989.84	6,929.36	24.71	26.82	-89.88	759.27	-251.56	969.67	919.76	49.91	19.429		
7,000.00	6,976.62	7,039.70	6,975.84	24.85	26.94	-89.89	759.45	-233.53	969.67	919.48	50.19	19.318		
7,050.00	7,021.83	7,089.56	7,020.95	24.98	27.05	-89.89	759.67	-212.32	969.67	919.19	50.48	19.208		
7,100.00	7,065.44	7,139.43	7,064.49	25.12	27.16	-89.89	759.92	-188.02	969.68	918.89	50.78	19.095		
7,150.00	7,107.25	7,189.31	7,106.23	25.26	27.25	-89.90	760.20	-160.74	969.68	918.58	51.10	18.975		
7,200.00	7,147.03	7,239.19	7,145.97	25.41	27.34	-89.90	760.50	-130.62	969.68	918.22	51.46	18.845		
7,250.00	7,184.61	7,289.07	7,183.53	25.59	27.43	-89.91	760.84	-97.81	969.68	917.83	51.86	18.700		
7,300.00	7,219.80	7,338.97	7,218.72	25.79	27.51	-89.92	761.20	-62.45	969.69	917.37	52.32	18.534		
7,350.00	7,252.42	7,388.87	7,251.37	26.05	27.59	-89.92	761.59	-24.73	969.69	916.83	52.86	18.344		
7,400.00	7,282.33	7,438.78	7,281.32	26.35	27.69	-89.93	762.00	15.19	969.69	916.19	53.50	18.124		
7,450.00	7,309.37	7,488.69	7,308.41	26.72	27.85	-89.94	762.43	57.09	969.69	915.44	54.25	17.873		
7,500.00	7,333.40	7,538.62	7,332.53	27.16	28.12	-89.94	762.88	100.80	969.70	914.57	55.13	17.589		
7,550.00	7,354.32	7,588.56	7,353.55	27.66	28.55	-89.95	763.34	146.08	969.70	913.56	56.14	17.272		
7,600.00	7,372.03	7,638.50	7,371.37	28.24	29.08	-89.96	763.82	192.73	969.71	912.41	57.30	16.924		
7,650.00	7,386.43	7,688.46	7,385.89	28.90	29.71	-89.97	764.31	240.51	969.71	911.12	58.59	16.550		
7,700.00	7,397.45	7,738.43	7,397.05	29.62	30.41	-89.98	764.81	289.20	969.71	909.69	60.02	16.155		
7,750.00	7,405.05	7,788.40	7,404.79	30.41	31.17	-89.99	765.31	338.56	969.72	908.13	61.58	15.747		
7,800.00	7,409.18	7,838.39	7,409.07	31.26	32.00	-89.99	765.82	388.35	969.72	906.47	63.25	15.331		
7,834.26	7,410.00	7,872.65	7,410.00	31.86	32.59	-90.00	766.17	422.59	969.72	905.27	64.45	15.046		
7,900.00	7,410.00	7,938.39	7,410.00	33.09	33.82	-90.00	766.85	488.33	969.73	902.82	66.91	14.494		
8,000.00	7,410.00	8,038.39	7,410.00	35.13	35.81	-90.00	767.87	588.32	969.74	898.81	70.93	13.673		
8,100.00	7,410.00	8,138.39	7,410.00	37.32	37.97	-90.00	768.90	688.32	969.75	894.47	75.28	12.882		
8,200.00	7,410.00	8,238.39	7,410.00	39.66	40.26	-90.00	769.92	788.31	969.75	889.85	79.91	12.136		
8,300.00	7,410.00	8,338.39	7,410.00	42.11	42.68	-90.00	770.94	888.31	969.76	884.99	84.77	11.440		
8,400.00	7,410.00	8,438.39	7,410.00	44.66	45.19	-90.00	771.97	988.30	969.77	879.94	89.83	10.796		
8,500.00	7,410.00	8,538.39	7,410.00	47.29	47.79	-90.00	772.99	1,088.30	969.78	874.73	95.05	10.203		
8,600.00	7,410.00	8,638.39	7,410.00	49.98	50.45	-90.00	774.02	1,188.29	969.79	869.38	100.41	9.658		
8,700.00	7,410.00	8,738.39	7,410.00	52.73	53.18	-90.00	775.04	1,288.29	969.79	863.91	105.89	9.159		
8,800.00	7,410.00	8,838.39	7,410.00	55.53	55.96	-90.00	776.07	1,388.28	969.80	858.34	111.46	8.701		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3D-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,900.00	7,410.00	8,938.39	7,410.00	58.37	58.78	-90.00	777.09	1,488.28	969.81	852.68	117.13	8.280		
9,000.00	7,410.00	9,038.39	7,410.00	61.25	61.64	-90.00	778.12	1,588.27	969.82	846.96	122.86	7.894		
9,100.00	7,410.00	9,138.39	7,410.00	64.16	64.53	-90.00	779.14	1,688.27	969.83	841.16	128.66	7.538		
9,200.00	7,410.00	9,238.39	7,410.00	67.10	67.45	-90.00	780.17	1,788.26	969.84	835.32	134.52	7.210		
9,300.00	7,410.00	9,338.39	7,410.00	70.06	70.39	-90.00	781.19	1,888.26	969.84	829.42	140.42	6.907		
9,400.00	7,410.00	9,438.39	7,410.00	73.04	73.36	-90.00	782.21	1,988.25	969.85	823.48	146.37	6.626		
9,500.00	7,410.00	9,538.39	7,410.00	76.04	76.34	-90.00	783.24	2,088.25	969.86	817.50	152.36	6.366		
9,600.00	7,410.00	9,638.39	7,410.00	79.06	79.34	-90.00	784.26	2,188.24	969.87	811.49	158.38	6.124		
9,700.00	7,410.00	9,738.39	7,410.00	82.09	82.36	-90.00	785.29	2,288.24	969.88	805.45	164.42	5.899		
9,800.00	7,410.00	9,838.39	7,410.00	85.13	85.39	-90.00	786.31	2,388.23	969.88	799.39	170.50	5.689		
9,900.00	7,410.00	9,938.39	7,410.00	88.18	88.44	-90.00	787.34	2,488.22	969.89	793.29	176.60	5.492		
10,000.00	7,410.00	10,038.39	7,410.00	91.25	91.49	-90.00	788.36	2,588.22	969.90	787.18	182.72	5.308		
10,100.00	7,410.00	10,138.39	7,410.00	94.32	94.56	-90.00	789.39	2,688.21	969.91	781.05	188.86	5.136		
10,200.00	7,410.00	10,238.39	7,410.00	97.40	97.63	-90.00	790.41	2,788.21	969.92	774.90	195.02	4.974		
10,300.00	7,410.00	10,338.39	7,410.00	100.50	100.71	-90.00	791.44	2,888.20	969.93	768.74	201.19	4.821		
10,400.00	7,410.00	10,438.39	7,410.00	103.59	103.80	-90.00	792.46	2,988.20	969.93	762.56	207.38	4.677		
10,500.00	7,410.00	10,538.39	7,410.00	106.70	106.90	-90.00	793.48	3,088.19	969.94	756.36	213.58	4.541		
10,600.00	7,410.00	10,638.39	7,410.00	109.81	110.00	-90.00	794.51	3,188.19	969.95	750.16	219.79	4.413		
10,700.00	7,410.00	10,738.39	7,410.00	112.92	113.11	-90.00	795.53	3,288.18	969.96	743.94	226.02	4.292		
10,800.00	7,410.00	10,838.39	7,410.00	116.04	116.23	-90.00	796.56	3,388.18	969.97	737.72	232.25	4.176		
10,900.00	7,410.00	10,938.39	7,410.00	119.17	119.35	-90.00	797.58	3,488.17	969.97	731.48	238.49	4.067		
11,000.00	7,410.00	11,038.39	7,410.00	122.30	122.47	-90.00	798.61	3,588.17	969.98	725.23	244.75	3.963		
11,100.00	7,410.00	11,138.39	7,410.00	125.43	125.60	-90.00	799.63	3,688.16	969.99	718.98	251.01	3.864		
11,200.00	7,410.00	11,238.39	7,410.00	128.57	128.73	-90.00	800.66	3,788.16	970.00	712.72	257.28	3.770		
11,300.00	7,410.00	11,338.39	7,410.00	131.71	131.86	-90.00	801.68	3,888.15	970.01	706.45	263.55	3.681		
11,400.00	7,410.00	11,438.39	7,410.00	134.85	135.00	-90.00	802.71	3,988.15	970.01	700.18	269.83	3.595		
11,500.00	7,410.00	11,538.39	7,410.00	138.00	138.14	-90.00	803.73	4,088.14	970.02	693.90	276.12	3.513		
11,600.00	7,410.00	11,638.39	7,410.00	141.14	141.29	-90.00	804.75	4,188.14	970.03	687.62	282.42	3.435		
11,700.00	7,410.00	11,738.39	7,410.00	144.30	144.44	-90.00	805.78	4,288.13	970.04	681.32	288.71	3.360		
11,800.00	7,410.00	11,838.39	7,410.00	147.45	147.59	-90.00	806.80	4,388.12	970.05	675.03	295.02	3.288		
11,906.34	7,410.00	11,944.73	7,410.00	150.80	150.94	-90.00	807.89	4,494.46	970.06	668.33	301.73	3.215 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	0.31	40.08	0.21	40.08					
100.00	100.00	100.00	100.00	0.14	0.14	0.31	40.08	0.21	40.08	39.81	0.28	145.214		
200.00	200.00	200.00	200.00	0.50	0.50	0.31	40.08	0.21	40.08	39.09	0.99	40.366		
300.00	300.00	300.00	300.00	0.85	0.85	0.31	40.08	0.21	40.08	38.37	1.71	23.441		
400.00	400.00	400.00	400.00	1.21	1.21	0.31	40.08	0.21	40.08	37.66	2.43	16.516		
500.00	500.00	500.00	500.00	1.57	1.57	0.31	40.08	0.21	40.08	36.94	3.14	12.750		
600.00	600.00	600.00	600.00	1.93	1.93	0.31	40.08	0.21	40.08	36.22	3.86	10.382 CC, ES		
700.00	700.00	698.82	698.80	2.29	2.28	-1.03	41.49	-0.75	41.51	36.93	4.58	9.063		
800.00	800.00	797.41	797.25	2.65	2.64	-4.52	45.70	-3.61	45.93	40.61	5.31	8.646		
900.00	899.98	895.65	895.13	2.99	2.99	119.06	52.67	-8.36	54.37	48.34	6.03	9.015		
1,000.00	999.84	994.99	993.97	3.33	3.35	118.93	60.87	-13.95	65.82	59.10	6.72	9.796		
1,056.01	1,055.67	1,050.52	1,049.23	3.52	3.56	119.89	65.45	-17.07	72.98	65.87	7.11	10.266		
1,100.00	1,099.48	1,094.11	1,092.59	3.67	3.72	120.88	69.05	-19.52	78.84	71.42	7.42	10.631		
1,200.00	1,199.08	1,193.17	1,191.16	4.03	4.09	122.65	77.22	-25.09	92.22	84.10	8.12	11.359		
1,300.00	1,298.69	1,292.24	1,289.73	4.38	4.46	123.97	85.40	-30.66	105.66	96.83	8.83	11.970		
1,400.00	1,398.29	1,391.30	1,388.30	4.74	4.83	124.99	93.58	-36.23	119.15	109.61	9.54	12.487		
1,500.00	1,497.89	1,490.37	1,486.88	5.11	5.20	125.81	101.75	-41.80	132.67	122.40	10.26	12.930		
1,600.00	1,597.49	1,589.44	1,585.45	5.48	5.58	126.47	109.93	-47.37	146.20	135.22	10.98	13.313		
1,700.00	1,697.09	1,688.50	1,684.02	5.85	5.95	127.02	118.10	-52.94	159.76	148.05	11.71	13.648		
1,800.00	1,796.69	1,787.57	1,782.59	6.22	6.33	127.49	126.28	-58.51	173.32	160.89	12.43	13.942		
1,900.00	1,896.29	1,886.64	1,881.16	6.59	6.71	127.89	134.46	-64.08	186.90	173.74	13.16	14.202		
2,000.00	1,995.89	1,985.70	1,979.73	6.96	7.08	128.23	142.63	-69.65	200.48	186.59	13.89	14.434		
2,100.00	2,095.49	2,084.77	2,078.30	7.34	7.46	128.53	150.81	-75.22	214.07	199.45	14.62	14.642		
2,200.00	2,195.09	2,183.84	2,176.87	7.71	7.84	128.79	158.99	-80.79	227.67	212.32	15.35	14.830		
2,300.00	2,294.70	2,282.90	2,275.45	8.09	8.21	129.03	167.16	-86.36	241.27	225.18	16.08	15.000		
2,400.00	2,394.30	2,381.97	2,374.02	8.47	8.59	129.24	175.34	-91.93	254.87	238.05	16.82	15.155		
2,500.00	2,493.90	2,481.04	2,472.59	8.85	8.97	129.43	183.51	-97.50	268.47	250.92	17.55	15.296		
2,600.00	2,593.50	2,580.10	2,571.16	9.22	9.35	129.60	191.69	-103.07	282.08	263.80	18.29	15.425		
2,700.00	2,693.10	2,679.17	2,669.73	9.60	9.73	129.75	199.87	-108.64	295.69	276.67	19.02	15.545		
2,800.00	2,792.70	2,778.24	2,768.30	9.98	10.10	129.89	208.04	-114.21	309.30	289.55	19.76	15.655		
2,900.00	2,892.30	2,877.30	2,866.87	10.36	10.48	130.02	216.22	-119.78	322.92	302.42	20.49	15.757		
3,000.00	2,991.90	2,976.37	2,965.44	10.74	10.86	130.14	224.40	-125.35	336.53	315.30	21.23	15.851		
3,100.00	3,091.50	3,075.43	3,064.01	11.12	11.24	130.25	232.57	-130.92	350.15	328.18	21.97	15.940		
3,200.00	3,191.10	3,174.50	3,162.59	11.50	11.62	130.35	240.75	-136.49	363.77	341.06	22.70	16.022		
3,300.00	3,290.71	3,273.57	3,261.16	11.88	12.00	130.44	248.93	-142.06	377.39	353.95	23.44	16.099		
3,400.00	3,390.31	3,372.63	3,359.73	12.26	12.38	130.53	257.10	-147.63	391.01	366.83	24.18	16.171		
3,500.00	3,489.91	3,471.70	3,458.30	12.64	12.76	130.61	265.28	-153.20	404.63	379.71	24.92	16.239		
3,600.00	3,589.51	3,570.77	3,556.87	13.03	13.14	130.69	273.45	-158.77	418.25	392.59	25.66	16.302		
3,700.00	3,689.11	3,669.83	3,655.44	13.41	13.52	130.76	281.63	-164.34	431.87	405.48	26.39	16.362		
3,800.00	3,788.71	3,768.90	3,754.01	13.79	13.90	130.83	289.81	-169.91	445.49	418.36	27.13	16.419		
3,900.00	3,888.31	3,867.97	3,852.58	14.17	14.27	130.89	297.98	-175.48	459.12	431.25	27.87	16.473		
4,000.00	3,987.91	3,967.03	3,951.16	14.55	14.65	130.95	306.16	-181.05	472.74	444.13	28.61	16.523		
4,100.00	4,087.51	4,066.10	4,049.73	14.93	15.03	131.01	314.34	-186.62	486.37	457.02	29.35	16.572		
4,200.00	4,187.11	4,165.17	4,148.30	15.32	15.41	131.06	322.51	-192.19	499.99	469.90	30.09	16.617		
4,300.00	4,286.71	4,264.23	4,246.87	15.70	15.79	131.11	330.69	-197.76	513.61	482.79	30.83	16.661		
4,400.00	4,386.32	4,363.30	4,345.44	16.08	16.17	131.16	338.86	-203.33	527.24	495.67	31.57	16.702		
4,500.00	4,485.92	4,462.37	4,444.01	16.46	16.55	131.20	347.04	-208.90	540.87	508.56	32.31	16.742		
4,600.00	4,585.52	4,561.43	4,542.58	16.84	16.93	131.24	355.22	-214.47	554.49	521.45	33.05	16.779		
4,700.00	4,685.12	4,660.50	4,641.15	17.23	17.31	131.29	363.39	-220.04	568.12	534.33	33.79	16.815		
4,759.45	4,744.33	4,719.39	4,699.76	17.45	17.54	131.31	368.25	-223.35	576.22	541.99	34.23	16.836		
4,800.00	4,784.74	4,759.59	4,739.75	17.61	17.69	131.38	371.57	-225.61	581.56	547.03	34.52	16.845		
4,900.00	4,884.57	4,858.90	4,838.56	17.98	18.07	131.37	379.77	-231.20	593.11	557.86	35.26	16.823		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.00	4,984.54	4,958.36	4,937.52	18.33	18.45	131.07	387.98	-236.79	602.40	566.42	35.98	16.743	
5,015.46	5,000.00	4,973.74	4,952.83	18.38	18.51	4.38	389.25	-237.66	603.63	567.54	36.09	16.727	
5,100.00	5,084.54	5,057.86	5,036.52	18.65	18.83	3.89	396.19	-242.39	610.26	573.58	36.68	16.638	
5,200.00	5,184.54	5,157.36	5,135.53	18.98	19.22	3.32	404.40	-247.98	618.16	580.78	37.38	16.538	
5,300.00	5,284.54	5,256.86	5,234.53	19.30	19.60	2.76	412.61	-253.57	626.12	588.04	38.08	16.443	
5,400.00	5,384.54	5,356.36	5,333.53	19.63	19.98	2.22	420.82	-259.17	634.13	595.35	38.78	16.352	
5,500.00	5,484.54	5,455.86	5,432.54	19.95	20.36	1.69	429.04	-264.76	642.20	602.72	39.48	16.266	
5,600.00	5,584.54	5,555.36	5,531.54	20.28	20.74	1.17	437.25	-270.36	650.33	610.15	40.18	16.184	
5,700.00	5,684.54	5,654.86	5,630.54	20.61	21.12	0.67	445.46	-275.95	658.50	617.62	40.88	16.106	
5,800.00	5,784.54	5,758.10	5,733.27	20.94	21.52	0.16	453.93	-281.72	666.68	625.07	41.61	16.021	
5,900.00	5,884.54	5,881.77	5,856.62	21.27	21.98	-0.26	461.24	-286.70	672.61	630.15	42.46	15.841	
6,000.00	5,984.54	6,005.99	5,980.78	21.60	22.41	-0.43	464.16	-288.69	674.97	631.73	43.24	15.609	
6,100.00	6,084.54	6,109.75	6,084.54	21.94	22.76	-0.43	464.21	-288.73	675.01	631.08	43.93	15.364	
6,200.00	6,184.54	6,209.75	6,184.54	22.27	23.10	-0.43	464.21	-288.73	675.01	630.39	44.62	15.128	
6,300.00	6,284.54	6,309.75	6,284.54	22.60	23.44	-0.43	464.21	-288.73	675.01	629.71	45.30	14.900	
6,400.00	6,384.54	6,409.75	6,384.54	22.94	23.77	-0.43	464.21	-288.73	675.01	629.02	45.99	14.678	
6,500.00	6,484.54	6,509.75	6,484.54	23.27	24.11	-0.43	464.21	-288.73	675.01	628.34	46.68	14.462	
6,600.00	6,584.54	6,609.75	6,584.54	23.61	24.45	-0.43	464.21	-288.73	675.01	627.65	47.36	14.252	
6,601.59	6,586.13	6,611.34	6,586.13	23.62	24.46	-0.43	464.21	-288.73	675.01	627.64	47.37	14.249	
6,709.26	6,693.80	6,718.62	6,693.30	23.98	24.81	-0.15	464.25	-285.35	675.03	626.93	48.10	14.034	
6,750.00	6,734.52	6,758.77	6,733.13	24.11	24.93	-89.23	464.30	-280.33	675.07	626.71	48.36	13.959	
6,800.00	6,784.30	6,807.75	6,781.25	24.27	25.07	-88.83	464.39	-271.21	675.15	626.48	48.67	13.872	
6,850.00	6,833.64	6,856.43	6,828.33	24.42	25.21	-88.43	464.52	-258.90	675.26	626.30	48.97	13.790	
6,900.00	6,882.29	6,904.81	6,874.19	24.57	25.33	-88.04	464.67	-243.53	675.41	626.15	49.26	13.712	
6,950.00	6,930.03	6,952.90	6,918.65	24.71	25.45	-87.66	464.86	-225.22	675.57	626.03	49.54	13.636	
7,000.00	6,976.62	7,000.00	6,960.91	24.85	25.57	-87.30	465.07	-204.43	675.77	625.94	49.82	13.564	
7,050.00	7,021.83	7,048.29	7,002.71	24.98	25.68	-86.95	465.31	-180.29	675.98	625.86	50.11	13.489	
7,100.00	7,065.44	7,095.61	7,042.01	25.12	25.79	-86.61	465.58	-153.95	676.20	625.79	50.41	13.414	
7,150.00	7,107.25	7,142.70	7,079.31	25.26	25.91	-86.29	465.87	-125.22	676.44	625.70	50.73	13.333	
7,200.00	7,147.03	7,189.57	7,114.48	25.41	26.03	-85.98	466.19	-94.24	676.68	625.59	51.09	13.245	
7,250.00	7,184.61	7,236.25	7,147.42	25.59	26.19	-85.70	466.52	-61.18	676.92	625.43	51.50	13.145	
7,300.00	7,219.80	7,282.75	7,178.02	25.79	26.38	-85.43	466.88	-26.18	677.16	625.20	51.96	13.031	
7,350.00	7,252.42	7,329.08	7,206.18	26.05	26.64	-85.19	467.25	10.60	677.40	624.89	52.51	12.900	
7,400.00	7,282.33	7,375.26	7,231.83	26.35	26.95	-84.97	467.64	48.99	677.62	624.47	53.15	12.749	
7,450.00	7,309.37	7,421.31	7,254.89	26.72	27.32	-84.77	468.05	88.83	677.83	623.94	53.90	12.576	
7,500.00	7,333.40	7,467.23	7,275.29	27.16	27.75	-84.60	468.47	129.96	678.02	623.26	54.76	12.381	
7,550.00	7,354.32	7,513.05	7,292.98	27.66	28.25	-84.45	468.90	172.22	678.19	622.44	55.75	12.164	
7,600.00	7,372.03	7,558.79	7,307.90	28.24	28.80	-84.32	469.34	215.45	678.34	621.46	56.87	11.927	
7,650.00	7,386.43	7,604.46	7,320.02	28.90	29.41	-84.22	469.78	259.47	678.46	620.33	58.12	11.672	
7,700.00	7,397.45	7,650.00	7,329.29	29.62	30.08	-84.15	470.24	304.05	678.54	619.04	59.50	11.404	
7,750.00	7,405.05	7,695.64	7,335.72	30.41	30.80	-84.10	470.69	349.22	678.60	617.60	61.00	11.124	
7,800.00	7,409.18	7,741.20	7,339.25	31.26	31.57	-84.08	471.16	394.63	678.63	616.02	62.61	10.840	
7,834.26	7,410.00	7,772.41	7,340.00	31.86	32.12	-84.08	471.47	425.83	678.63	614.87	63.75	10.645	
7,857.18	7,410.00	7,795.17	7,340.00	32.29	32.53	-84.08	471.70	448.59	678.63	614.04	64.59	10.507	
7,900.00	7,410.00	7,837.99	7,340.00	33.09	33.35	-84.08	472.14	491.41	678.63	612.42	66.21	10.250	
8,000.00	7,410.00	7,937.99	7,340.00	35.13	35.36	-84.08	473.16	591.40	678.63	608.40	70.23	9.663	
8,100.00	7,410.00	8,037.99	7,340.00	37.32	37.54	-84.08	474.17	691.40	678.63	604.05	74.58	9.099	
8,200.00	7,410.00	8,137.99	7,340.00	39.66	39.86	-84.08	475.19	791.39	678.63	599.42	79.21	8.568	
8,300.00	7,410.00	8,237.99	7,340.00	42.11	42.29	-84.08	476.20	891.39	678.63	594.56	84.07	8.073	
8,400.00	7,410.00	8,337.99	7,340.00	44.66	44.82	-84.08	477.22	991.38	678.63	589.51	89.12	7.615	
8,500.00	7,410.00	8,437.99	7,340.00	47.29	47.43	-84.08	478.24	1,091.38	678.63	584.30	94.33	7.194	
8,600.00	7,410.00	8,537.99	7,340.00	49.98	50.11	-84.08	479.25	1,191.37	678.62	578.95	99.67	6.808	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3E-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,700.00	7,410.00	8,637.99	7,340.00	52.73	52.85	-84.08	480.27	1,291.36	678.62	573.49	105.14	6.455		
8,800.00	7,410.00	8,737.99	7,340.00	55.53	55.64	-84.08	481.28	1,391.36	678.62	567.93	110.70	6.130		
8,900.00	7,410.00	8,837.99	7,340.00	58.37	58.47	-84.08	482.30	1,491.35	678.62	562.28	116.35	5.833		
9,000.00	7,410.00	8,937.99	7,340.00	61.25	61.34	-84.08	483.32	1,591.35	678.62	556.56	122.06	5.560		
9,100.00	7,410.00	9,037.99	7,340.00	64.16	64.24	-84.08	484.33	1,691.34	678.62	550.78	127.84	5.308		
9,200.00	7,410.00	9,137.99	7,340.00	67.10	67.17	-84.08	485.35	1,791.34	678.62	544.94	133.68	5.076		
9,300.00	7,410.00	9,237.99	7,340.00	70.06	70.13	-84.08	486.37	1,891.33	678.62	539.06	139.56	4.862		
9,400.00	7,410.00	9,337.99	7,340.00	73.04	73.10	-84.08	487.38	1,991.33	678.62	533.13	145.49	4.664		
9,500.00	7,410.00	9,437.99	7,340.00	76.04	76.09	-84.08	488.40	2,091.32	678.62	527.17	151.45	4.481		
9,600.00	7,410.00	9,537.99	7,340.00	79.06	79.10	-84.08	489.41	2,191.32	678.62	521.17	157.45	4.310		
9,700.00	7,410.00	9,637.99	7,340.00	82.09	82.13	-84.08	490.43	2,291.31	678.62	515.15	163.47	4.151		
9,800.00	7,410.00	9,737.99	7,340.00	85.13	85.17	-84.08	491.45	2,391.31	678.62	509.10	169.52	4.003		
9,900.00	7,410.00	9,837.99	7,340.00	88.18	88.22	-84.08	492.46	2,491.30	678.62	503.02	175.60	3.865		
10,000.00	7,410.00	9,937.99	7,340.00	91.25	91.28	-84.08	493.48	2,591.30	678.62	496.93	181.69	3.735		
10,100.00	7,410.00	10,037.99	7,340.00	94.32	94.35	-84.08	494.49	2,691.29	678.62	490.81	187.81	3.613		
10,200.00	7,410.00	10,137.99	7,340.00	97.40	97.43	-84.08	495.51	2,791.29	678.62	484.68	193.94	3.499		
10,300.00	7,410.00	10,237.99	7,340.00	100.50	100.52	-84.08	496.53	2,891.28	678.62	478.53	200.09	3.392		
10,400.00	7,410.00	10,337.99	7,340.00	103.59	103.61	-84.08	497.54	2,991.28	678.62	472.37	206.25	3.290		
10,500.00	7,410.00	10,437.99	7,340.00	106.70	106.71	-84.08	498.56	3,091.27	678.62	466.20	212.42	3.195		
10,600.00	7,410.00	10,537.99	7,340.00	109.81	109.82	-84.08	499.58	3,191.27	678.62	460.01	218.61	3.104		
10,700.00	7,410.00	10,637.99	7,340.00	112.92	112.93	-84.08	500.59	3,291.26	678.62	453.81	224.81	3.019		
10,800.00	7,410.00	10,737.99	7,340.00	116.04	116.05	-84.08	501.61	3,391.26	678.62	447.60	231.02	2.938		
10,900.00	7,410.00	10,837.99	7,340.00	119.17	119.17	-84.08	502.62	3,491.25	678.62	441.39	237.23	2.861		
11,000.00	7,410.00	10,937.99	7,340.00	122.30	122.30	-84.08	503.64	3,591.25	678.62	435.16	243.46	2.787		
11,100.00	7,410.00	11,037.99	7,340.00	125.43	125.43	-84.08	504.66	3,691.24	678.62	428.93	249.69	2.718		
11,200.00	7,410.00	11,137.99	7,340.00	128.57	128.56	-84.08	505.67	3,791.24	678.62	422.69	255.93	2.652		
11,300.00	7,410.00	11,237.99	7,340.00	131.71	131.70	-84.08	506.69	3,891.23	678.62	416.44	262.18	2.588		
11,400.00	7,410.00	11,337.99	7,340.00	134.85	134.84	-84.08	507.70	3,991.23	678.62	410.19	268.43	2.528		
11,500.00	7,410.00	11,437.99	7,340.00	138.00	137.99	-84.08	508.72	4,091.22	678.62	403.93	274.69	2.470		
11,600.00	7,410.00	11,537.99	7,340.00	141.14	141.13	-84.08	509.74	4,191.22	678.62	397.66	280.96	2.415		
11,700.00	7,410.00	11,637.99	7,340.00	144.30	144.28	-84.08	510.75	4,291.21	678.62	391.39	287.23	2.363		
11,800.00	7,410.00	11,737.99	7,340.00	147.45	147.43	-84.08	511.77	4,391.20	678.62	385.12	293.50	2.312		
11,906.34	7,410.00	11,844.33	7,340.00	150.80	150.79	-84.08	512.85	4,497.54	678.62	378.44	300.18	2.261 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	0.04	29.88	0.02	29.88					
100.00	100.00	100.00	100.00	0.14	0.14	0.04	29.88	0.02	29.88	29.60	0.28	108.237		
200.00	200.00	200.00	200.00	0.50	0.50	0.04	29.88	0.02	29.88	28.88	0.99	30.088		
300.00	300.00	300.00	300.00	0.85	0.85	0.04	29.88	0.02	29.88	28.17	1.71	17.472		
400.00	400.00	400.00	400.00	1.21	1.21	0.04	29.88	0.02	29.88	27.45	2.43	12.311		
500.00	500.00	500.00	500.00	1.57	1.57	0.04	29.88	0.02	29.88	26.73	3.14	9.503		
600.00	600.00	600.00	600.00	1.93	1.93	0.04	29.88	0.02	29.88	26.02	3.86	7.738		
700.00	700.00	700.00	700.00	2.29	2.29	0.04	29.88	0.02	29.88	25.30	4.58	6.526		
800.00	800.00	800.00	800.00	2.65	2.65	0.04	29.88	0.02	29.88	24.58	5.29	5.643 CC, ES		
900.00	899.98	899.98	899.98	2.99	3.01	129.24	29.88	0.02	30.95	24.95	6.00	5.160		
1,000.00	999.84	999.84	999.84	3.33	3.36	135.93	29.88	0.02	34.50	27.81	6.69	5.154		
1,056.01	1,055.67	1,055.29	1,055.29	3.52	3.56	139.85	30.25	-0.36	38.11	31.02	7.08	5.379		
1,100.00	1,099.48	1,098.80	1,098.78	3.67	3.72	141.93	31.07	-1.19	41.75	34.36	7.39	5.648		
1,200.00	1,199.08	1,197.57	1,197.42	4.03	4.07	143.03	34.66	-4.82	51.32	43.23	8.09	6.343		
1,300.00	1,298.69	1,296.55	1,296.07	4.38	4.42	141.39	40.31	-10.53	62.29	53.50	8.79	7.084		
1,400.00	1,398.29	1,395.91	1,395.07	4.74	4.78	139.99	46.22	-16.51	73.49	63.99	9.50	7.733		
1,500.00	1,497.89	1,495.27	1,494.07	5.11	5.14	138.97	52.14	-22.49	84.72	74.50	10.22	8.291		
1,600.00	1,597.49	1,594.62	1,593.07	5.48	5.50	138.18	58.05	-28.48	95.97	85.03	10.94	8.776		
1,700.00	1,697.09	1,693.98	1,692.07	5.85	5.87	137.56	63.97	-34.46	107.24	95.58	11.66	9.199		
1,800.00	1,796.69	1,793.34	1,791.07	6.22	6.23	137.06	69.89	-40.44	118.51	106.13	12.38	9.572		
1,900.00	1,896.29	1,892.70	1,890.07	6.59	6.60	136.65	75.80	-46.43	129.79	116.68	13.11	9.903		
2,000.00	1,995.89	1,992.05	1,989.07	6.96	6.97	136.30	81.72	-52.41	141.08	127.24	13.83	10.198		
2,100.00	2,095.49	2,091.41	2,088.07	7.34	7.34	136.00	87.63	-58.39	152.37	137.81	14.56	10.463		
2,200.00	2,195.09	2,190.77	2,187.07	7.71	7.70	135.74	93.55	-64.38	163.67	148.37	15.29	10.702		
2,300.00	2,294.70	2,290.13	2,286.07	8.09	8.07	135.52	99.47	-70.36	174.96	158.94	16.02	10.918		
2,400.00	2,394.30	2,389.49	2,385.08	8.47	8.44	135.33	105.38	-76.34	186.26	169.51	16.76	11.116		
2,500.00	2,493.90	2,488.84	2,484.08	8.85	8.81	135.15	111.30	-82.33	197.57	180.08	17.49	11.296		
2,600.00	2,593.50	2,588.20	2,583.08	9.22	9.18	135.00	117.21	-88.31	208.87	190.65	18.22	11.461		
2,700.00	2,693.10	2,687.56	2,682.08	9.60	9.55	134.86	123.13	-94.29	220.17	201.22	18.96	11.614		
2,800.00	2,792.70	2,786.92	2,781.08	9.98	9.93	134.73	129.05	-100.27	231.48	211.79	19.69	11.754		
2,900.00	2,892.30	2,886.27	2,880.08	10.36	10.30	134.62	134.96	-106.26	242.79	222.36	20.43	11.884		
3,000.00	2,991.90	2,985.63	2,979.08	10.74	10.67	134.52	140.88	-112.24	254.10	232.93	21.17	12.005		
3,100.00	3,091.50	3,084.99	3,078.08	11.12	11.04	134.42	146.79	-118.22	265.40	243.50	21.90	12.118		
3,200.00	3,191.10	3,184.35	3,177.08	11.50	11.41	134.33	152.71	-124.21	276.71	254.08	22.64	12.223		
3,300.00	3,290.71	3,283.70	3,276.08	11.88	11.78	134.25	158.63	-130.19	288.02	264.65	23.38	12.322		
3,400.00	3,390.31	3,383.06	3,375.08	12.26	12.16	134.18	164.54	-136.17	299.33	275.22	24.11	12.414		
3,500.00	3,489.91	3,482.42	3,474.08	12.64	12.53	134.11	170.46	-142.16	310.65	285.80	24.85	12.500		
3,600.00	3,589.51	3,581.78	3,573.08	13.03	12.90	134.05	176.37	-148.14	321.96	296.37	25.59	12.582		
3,700.00	3,689.11	3,681.13	3,672.08	13.41	13.27	133.99	182.29	-154.12	333.27	306.94	26.33	12.659		
3,800.00	3,788.71	3,780.49	3,771.08	13.79	13.65	133.93	188.21	-160.11	344.58	317.52	27.07	12.731		
3,900.00	3,888.31	3,879.85	3,870.09	14.17	14.02	133.88	194.12	-166.09	355.89	328.09	27.80	12.800		
4,000.00	3,987.91	3,979.21	3,969.09	14.55	14.39	133.83	200.04	-172.07	367.21	338.66	28.54	12.865		
4,100.00	4,087.51	4,078.56	4,068.09	14.93	14.77	133.79	205.95	-178.06	378.52	349.24	29.28	12.927		
4,200.00	4,187.11	4,177.92	4,167.09	15.32	15.14	133.74	211.87	-184.04	389.83	359.81	30.02	12.985		
4,300.00	4,286.71	4,277.28	4,266.09	15.70	15.51	133.70	217.78	-190.02	401.15	370.39	30.76	13.041		
4,400.00	4,386.32	4,376.64	4,365.09	16.08	15.89	133.66	223.70	-196.01	412.46	380.96	31.50	13.094		
4,500.00	4,485.92	4,475.99	4,464.09	16.46	16.26	133.63	229.62	-201.99	423.77	391.53	32.24	13.144		
4,600.00	4,585.52	4,575.35	4,563.09	16.84	16.63	133.59	235.53	-207.97	435.09	402.11	32.98	13.193		
4,700.00	4,685.12	4,674.71	4,662.09	17.23	17.01	133.56	241.45	-213.95	446.40	412.68	33.72	13.239		
4,759.45	4,744.33	4,733.78	4,720.95	17.45	17.23	133.54	244.97	-217.51	453.13	418.97	34.16	13.265		
4,800.00	4,784.74	4,774.09	4,761.11	17.61	17.38	133.57	247.37	-219.94	457.52	423.06	34.46	13.277		
4,900.00	4,884.57	4,873.63	4,860.30	17.98	17.75	133.39	253.29	-225.93	466.67	431.48	35.19	13.261		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
5,000.00	4,984.54	4,973.27	4,959.58	18.33	18.13	132.88	259.23	-231.93	473.47	437.55	35.92	13.182		
5,015.46	5,000.00	4,988.67	4,974.93	18.38	18.19	6.15	260.14	-232.86	474.31	438.29	36.03	13.165		
5,100.00	5,084.54	5,072.91	5,058.86	18.65	18.50	5.48	265.16	-237.93	478.82	442.19	36.62	13.074		
5,200.00	5,184.54	5,172.55	5,158.15	18.98	18.88	4.71	271.09	-243.93	484.22	446.90	37.33	12.973		
5,300.00	5,284.54	5,272.19	5,257.43	19.30	19.25	3.95	277.02	-249.93	489.72	451.69	38.03	12.877		
5,400.00	5,384.54	5,371.83	5,356.71	19.63	19.63	3.21	282.96	-255.93	495.30	456.56	38.73	12.787		
5,500.00	5,484.54	5,471.47	5,455.99	19.95	20.00	2.49	288.89	-261.93	500.95	461.52	39.44	12.702		
5,600.00	5,584.54	5,571.12	5,555.28	20.28	20.38	1.78	294.82	-267.94	506.69	466.55	40.14	12.622		
5,700.00	5,684.54	5,670.76	5,654.56	20.61	20.75	1.09	300.76	-273.94	512.50	471.66	40.85	12.547		
5,800.00	5,784.54	5,770.40	5,753.84	20.94	21.13	0.41	306.69	-279.94	518.39	476.84	41.55	12.476		
5,900.00	5,884.54	5,884.27	5,867.46	21.27	21.55	-0.18	311.98	-285.29	523.04	480.69	42.35	12.351		
6,000.00	5,984.54	5,999.09	5,982.24	21.60	21.96	-0.41	314.10	-287.43	524.90	481.79	43.11	12.176		
6,100.00	6,084.54	6,101.40	6,084.54	21.94	22.31	-0.42	314.14	-287.47	524.93	481.13	43.80	11.985		
6,200.00	6,184.54	6,201.40	6,184.54	22.27	22.65	-0.42	314.14	-287.47	524.93	480.45	44.48	11.800		
6,300.00	6,284.54	6,301.40	6,284.54	22.60	22.99	-0.42	314.14	-287.47	524.93	479.76	45.17	11.621		
6,400.00	6,384.54	6,401.40	6,384.54	22.94	23.34	-0.42	314.14	-287.47	524.93	479.07	45.86	11.447		
6,500.00	6,484.54	6,501.40	6,484.54	23.27	23.68	-0.42	314.14	-287.47	524.93	478.39	46.54	11.278		
6,600.00	6,584.54	6,601.40	6,584.54	23.61	24.03	-0.42	314.14	-287.47	524.93	477.70	47.23	11.114		
6,709.26	6,693.80	6,710.66	6,693.80	23.98	24.41	-0.42	314.14	-287.47	524.93	476.94	47.99	10.939		
6,750.00	6,734.52	6,751.31	6,734.43	24.11	24.54	-89.84	314.15	-286.31	524.93	476.67	48.26	10.878		
6,800.00	6,784.30	6,801.21	6,784.11	24.27	24.70	-89.84	314.19	-281.75	524.93	476.36	48.57	10.807		
6,850.00	6,833.64	6,851.11	6,833.35	24.42	24.85	-89.84	314.28	-273.74	524.93	476.05	48.88	10.740		
6,900.00	6,882.29	6,901.01	6,881.92	24.57	24.99	-89.84	314.39	-262.32	524.93	475.76	49.17	10.675		
6,950.00	6,930.03	6,950.91	6,929.57	24.71	25.13	-89.85	314.54	-247.55	524.93	475.47	49.46	10.613		
7,000.00	6,976.62	7,000.81	6,976.08	24.85	25.26	-89.85	314.73	-229.50	524.93	475.18	49.75	10.551		
7,050.00	7,021.83	7,050.72	7,021.22	24.98	25.40	-89.85	314.94	-208.25	524.93	474.89	50.04	10.490		
7,100.00	7,065.44	7,100.62	7,064.78	25.12	25.53	-89.86	315.19	-183.90	524.93	474.59	50.34	10.427		
7,150.00	7,107.25	7,150.54	7,106.54	25.26	25.67	-89.87	315.47	-156.59	524.93	474.26	50.66	10.361		
7,200.00	7,147.03	7,200.45	7,146.30	25.41	25.82	-89.87	315.77	-126.42	524.93	473.91	51.02	10.289		
7,250.00	7,184.61	7,250.38	7,183.87	25.59	26.00	-89.88	316.11	-93.56	524.93	473.51	51.42	10.208		
7,300.00	7,219.80	7,300.30	7,219.05	25.79	26.21	-89.89	316.47	-58.16	524.93	473.04	51.89	10.117		
7,350.00	7,252.42	7,350.23	7,251.69	26.05	26.47	-89.90	316.85	-20.39	524.93	472.49	52.43	10.011		
7,400.00	7,282.33	7,400.17	7,281.63	26.35	26.78	-89.91	317.26	19.57	524.93	471.85	53.08	9.890		
7,450.00	7,309.37	7,450.12	7,308.71	26.72	27.15	-89.92	317.68	61.52	524.93	471.09	53.83	9.751		
7,500.00	7,333.40	7,500.06	7,332.80	27.16	27.58	-89.93	318.13	105.26	524.93	470.21	54.72	9.594		
7,550.00	7,354.32	7,550.02	7,353.79	27.66	28.08	-89.94	318.59	150.58	524.93	469.19	55.73	9.418		
7,600.00	7,372.03	7,600.00	7,371.58	28.24	28.66	-89.95	319.06	197.27	524.93	468.03	56.90	9.226		
7,620.39	7,378.30	7,620.36	7,377.88	28.51	28.92	-89.95	319.26	216.63	524.93	467.50	57.43	9.141		
7,650.00	7,386.43	7,649.95	7,386.06	28.90	29.30	-89.96	319.55	245.07	524.93	466.73	58.20	9.020		
7,700.00	7,397.45	7,699.93	7,397.18	29.62	30.02	-89.97	320.04	293.78	524.93	465.29	59.64	8.802		
7,750.00	7,405.05	7,749.91	7,404.87	30.41	30.80	-89.98	320.54	343.15	524.93	463.72	61.21	8.576		
7,800.00	7,409.18	7,799.91	7,409.11	31.26	31.63	-89.99	321.05	392.95	524.93	462.04	62.88	8.347		
7,834.26	7,410.00	7,834.17	7,410.00	31.86	32.23	-90.00	321.40	427.20	524.93	460.83	64.09	8.190		
7,900.00	7,410.00	7,899.90	7,410.00	33.09	33.44	-90.00	322.07	492.93	524.93	458.39	66.54	7.889		
8,000.00	7,410.00	7,999.90	7,410.00	35.13	35.45	-90.00	323.08	592.93	524.93	454.35	70.58	7.438		
8,100.00	7,410.00	8,099.90	7,410.00	37.32	37.63	-90.00	324.10	692.92	524.93	449.98	74.95	7.004		
8,200.00	7,410.00	8,199.90	7,410.00	39.66	39.94	-90.00	325.11	792.92	524.93	445.33	79.60	6.595		
8,300.00	7,410.00	8,299.90	7,410.00	42.11	42.37	-90.00	326.13	892.91	524.92	440.45	84.48	6.214		
8,400.00	7,410.00	8,399.90	7,410.00	44.66	44.90	-90.00	327.15	992.91	524.92	435.37	89.55	5.862		
8,500.00	7,410.00	8,499.90	7,410.00	47.29	47.51	-90.00	328.16	1,092.90	524.92	430.14	94.79	5.538		
8,600.00	7,410.00	8,599.90	7,410.00	49.98	50.19	-90.00	329.18	1,192.89	524.92	424.76	100.16	5.241		
8,700.00	7,410.00	8,699.90	7,410.00	52.73	52.92	-90.00	330.20	1,292.89	524.92	419.28	105.65	4.969		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3F-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Total Uncertainty Axis	Separation Factor
8,800.00	7,410.00	8,799.90	7,410.00	55.53	55.71	-90.00	331.21	1,392.88	524.92	413.69		111.24	4.719
8,900.00	7,410.00	8,899.90	7,410.00	58.37	58.54	-90.00	332.23	1,492.88	524.92	408.01		116.91	4.490
9,000.00	7,410.00	8,999.90	7,410.00	61.25	61.41	-90.00	333.24	1,592.87	524.92	402.27		122.65	4.280
9,100.00	7,410.00	9,099.90	7,410.00	64.16	64.31	-90.00	334.26	1,692.87	524.92	396.46		128.46	4.086
9,200.00	7,410.00	9,199.90	7,410.00	67.10	67.23	-90.00	335.28	1,792.86	524.92	390.60		134.33	3.908
9,300.00	7,410.00	9,299.90	7,410.00	70.06	70.19	-90.00	336.29	1,892.86	524.92	384.68		140.24	3.743
9,400.00	7,410.00	9,399.90	7,410.00	73.04	73.16	-90.00	337.31	1,992.85	524.92	378.73		146.19	3.591
9,500.00	7,410.00	9,499.90	7,410.00	76.04	76.15	-90.00	338.32	2,092.85	524.92	372.74		152.18	3.449
9,600.00	7,410.00	9,599.90	7,410.00	79.06	79.16	-90.00	339.34	2,192.84	524.92	366.71		158.21	3.318
9,700.00	7,410.00	9,699.90	7,410.00	82.09	82.18	-90.00	340.36	2,292.84	524.92	360.66		164.26	3.196
9,800.00	7,410.00	9,799.90	7,410.00	85.13	85.22	-90.00	341.37	2,392.83	524.92	354.58		170.34	3.082
9,900.00	7,410.00	9,899.90	7,410.00	88.18	88.27	-90.00	342.39	2,492.83	524.92	348.47		176.45	2.975
10,000.00	7,410.00	9,999.90	7,410.00	91.25	91.33	-90.00	343.41	2,592.82	524.92	342.35		182.57	2.875
10,100.00	7,410.00	10,099.90	7,410.00	94.32	94.40	-90.00	344.42	2,692.82	524.92	336.21		188.71	2.782
10,200.00	7,410.00	10,199.90	7,410.00	97.40	97.48	-90.00	345.44	2,792.81	524.92	330.04		194.88	2.694
10,300.00	7,410.00	10,299.90	7,410.00	100.50	100.56	-90.00	346.45	2,892.81	524.92	323.87		201.05	2.611
10,400.00	7,410.00	10,399.90	7,410.00	103.59	103.66	-90.00	347.47	2,992.80	524.92	317.68		207.24	2.533
10,500.00	7,410.00	10,499.90	7,410.00	106.70	106.76	-90.00	348.49	3,092.80	524.92	311.47		213.45	2.459
10,600.00	7,410.00	10,599.90	7,410.00	109.81	109.86	-90.00	349.50	3,192.79	524.92	305.25		219.66	2.390
10,700.00	7,410.00	10,699.90	7,410.00	112.92	112.97	-90.00	350.52	3,292.79	524.92	299.03		225.89	2.324
10,800.00	7,410.00	10,799.90	7,410.00	116.04	116.09	-90.00	351.53	3,392.78	524.92	292.79		232.13	2.261
10,900.00	7,410.00	10,899.90	7,410.00	119.17	119.21	-90.00	352.55	3,492.78	524.92	286.54		238.38	2.202
11,000.00	7,410.00	10,999.90	7,410.00	122.30	122.34	-90.00	353.57	3,592.77	524.92	280.29		244.63	2.146
11,100.00	7,410.00	11,099.90	7,410.00	125.43	125.47	-90.00	354.58	3,692.77	524.92	274.02		250.90	2.092
11,200.00	7,410.00	11,199.90	7,410.00	128.57	128.60	-90.00	355.60	3,792.76	524.92	267.75		257.17	2.041
11,300.00	7,410.00	11,299.90	7,410.00	131.71	131.74	-90.00	356.62	3,892.76	524.92	261.47		263.44	1.993
11,400.00	7,410.00	11,399.90	7,410.00	134.85	134.88	-90.00	357.63	3,992.75	524.92	255.19		269.73	1.946
11,500.00	7,410.00	11,499.90	7,410.00	138.00	138.03	-90.00	358.65	4,092.75	524.92	248.90		276.02	1.902
11,600.00	7,410.00	11,599.90	7,410.00	141.14	141.17	-90.00	359.66	4,192.74	524.92	242.60		282.31	1.859
11,700.00	7,410.00	11,699.90	7,410.00	144.30	144.32	-90.00	360.68	4,292.73	524.92	236.30		288.61	1.819
11,800.00	7,410.00	11,799.90	7,410.00	147.45	147.47	-90.00	361.70	4,392.73	524.92	230.00		294.92	1.780
11,906.34	7,410.00	11,906.25	7,410.00	150.80	150.83	-90.00	362.78	4,499.07	524.92	223.29		301.63	1.740 SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3G-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	0.31	20.05	0.11	20.05					
100.00	100.00	100.00	100.00	0.14	0.14	0.31	20.05	0.11	20.05	19.77	0.28	72.622		
200.00	200.00	200.00	200.00	0.50	0.50	0.31	20.05	0.11	20.05	19.05	0.99	20.187		
300.00	300.00	300.00	300.00	0.85	0.85	0.31	20.05	0.11	20.05	18.34	1.71	11.723		
400.00	400.00	400.00	400.00	1.21	1.21	0.31	20.05	0.11	20.05	17.62	2.43	8.260		
500.00	500.00	500.00	500.00	1.57	1.57	0.31	20.05	0.11	20.05	16.90	3.14	6.376		
600.00	600.00	600.00	600.00	1.93	1.93	0.31	20.05	0.11	20.05	16.18	3.86	5.192		
700.00	700.00	700.00	700.00	2.29	2.29	0.31	20.05	0.11	20.05	15.47	4.58	4.379		
800.00	800.00	800.00	800.00	2.65	2.65	0.31	20.05	0.11	20.05	14.75	5.29	3.786 CC, ES		
900.00	899.98	900.12	900.09	2.99	3.00	126.01	19.75	-1.62	20.79	14.80	5.99	3.472		
1,000.00	999.84	1,000.19	1,000.03	3.33	3.34	123.64	18.87	-6.78	23.06	16.39	6.67	3.457		
1,056.01	1,055.67	1,056.21	1,055.87	3.52	3.54	121.96	18.12	-11.18	25.02	17.96	7.06	3.544		
1,100.00	1,099.48	1,100.18	1,099.63	3.67	3.69	120.11	17.41	-15.32	26.74	19.37	7.37	3.629		
1,200.00	1,199.08	1,200.08	1,199.05	4.03	4.05	116.22	15.76	-24.99	30.74	22.66	8.08	3.806		
1,300.00	1,298.69	1,299.98	1,298.47	4.38	4.41	113.24	14.11	-34.65	34.84	26.05	8.79	3.962		
1,400.00	1,398.29	1,399.88	1,397.89	4.74	4.78	110.89	12.45	-44.31	39.03	29.50	9.52	4.099		
1,500.00	1,497.89	1,499.78	1,497.31	5.11	5.15	108.99	10.80	-53.98	43.26	33.01	10.25	4.218		
1,600.00	1,597.49	1,599.68	1,596.73	5.48	5.52	107.44	9.15	-63.64	47.53	36.54	10.99	4.324		
1,700.00	1,697.09	1,699.58	1,696.15	5.85	5.90	106.14	7.50	-73.31	51.84	40.10	11.73	4.417		
1,800.00	1,796.69	1,799.48	1,795.57	6.22	6.27	105.05	5.85	-82.97	56.16	43.68	12.48	4.500		
1,900.00	1,896.29	1,899.39	1,894.98	6.59	6.65	104.11	4.20	-92.63	60.50	47.28	13.23	4.574		
2,000.00	1,995.89	1,999.29	1,994.40	6.96	7.03	103.29	2.55	-102.30	64.86	50.88	13.98	4.640		
2,100.00	2,095.49	2,099.19	2,093.82	7.34	7.41	102.58	0.90	-111.96	69.23	54.50	14.73	4.700		
2,200.00	2,195.09	2,199.09	2,193.24	7.71	7.79	101.95	-0.76	-121.63	73.60	58.12	15.48	4.754		
2,300.00	2,294.70	2,298.99	2,292.66	8.09	8.17	101.40	-2.41	-131.29	77.99	61.75	16.24	4.803		
2,400.00	2,394.30	2,398.89	2,392.08	8.47	8.55	100.90	-4.06	-140.95	82.38	65.39	16.99	4.847		
2,500.00	2,493.90	2,498.79	2,491.50	8.85	8.93	100.45	-5.71	-150.62	86.78	69.03	17.75	4.888		
2,600.00	2,593.50	2,598.69	2,590.92	9.22	9.31	100.05	-7.36	-160.28	91.18	72.67	18.51	4.926		
2,700.00	2,693.10	2,698.59	2,690.34	9.60	9.70	99.68	-9.01	-169.95	95.59	76.32	19.27	4.961		
2,800.00	2,792.70	2,798.50	2,789.75	9.98	10.08	99.35	-10.66	-179.61	100.00	79.97	20.03	4.993		
2,900.00	2,892.30	2,898.40	2,889.17	10.36	10.46	99.04	-12.31	-189.27	104.41	83.62	20.79	5.022		
3,000.00	2,991.90	2,998.30	2,988.59	10.74	10.85	98.76	-13.97	-198.94	108.83	87.28	21.55	5.050		
3,100.00	3,091.50	3,098.20	3,088.01	11.12	11.23	98.50	-15.62	-208.60	113.24	90.93	22.31	5.076		
3,200.00	3,191.10	3,198.10	3,187.43	11.50	11.62	98.26	-17.27	-218.26	117.66	94.59	23.07	5.100		
3,300.00	3,290.71	3,298.00	3,286.85	11.88	12.00	98.04	-18.92	-227.93	122.09	98.25	23.84	5.122		
3,400.00	3,390.31	3,397.90	3,386.27	12.26	12.38	97.83	-20.57	-237.59	126.51	101.91	24.60	5.143		
3,500.00	3,489.91	3,497.80	3,485.69	12.64	12.77	97.64	-22.22	-247.26	130.93	105.57	25.36	5.163		
3,600.00	3,589.51	3,597.70	3,585.11	13.03	13.15	97.46	-23.87	-256.92	135.36	109.24	26.12	5.182		
3,700.00	3,689.11	3,697.61	3,684.52	13.41	13.54	97.29	-25.53	-266.58	139.79	112.90	26.89	5.199		
3,800.00	3,788.71	3,798.62	3,785.12	13.79	13.92	97.42	-27.07	-275.60	143.96	116.31	27.66	5.205		
3,900.00	3,888.31	3,900.18	3,886.51	14.17	14.30	98.78	-28.05	-281.34	147.07	118.66	28.41	5.176		
4,000.00	3,987.91	4,001.44	3,987.74	14.55	14.65	101.41	-28.42	-283.53	149.28	120.13	29.15	5.121		
4,100.00	4,087.51	4,101.21	4,087.51	14.93	14.98	104.70	-28.42	-283.55	151.31	121.45	29.86	5.068		
4,200.00	4,187.11	4,200.81	4,187.11	15.32	15.31	107.91	-28.42	-283.55	153.83	123.27	30.56	5.034		
4,300.00	4,286.71	4,300.42	4,286.71	15.70	15.65	111.00	-28.42	-283.55	156.81	125.56	31.25	5.018		
4,400.00	4,386.32	4,400.02	4,386.32	16.08	15.98	113.97	-28.42	-283.55	160.24	128.30	31.94	5.017		
4,500.00	4,485.92	4,499.62	4,485.92	16.46	16.31	116.81	-28.42	-283.55	164.08	131.46	32.62	5.030		
4,600.00	4,585.52	4,599.22	4,585.52	16.84	16.65	119.52	-28.42	-283.55	168.30	135.00	33.30	5.054		
4,700.00	4,685.12	4,698.82	4,685.12	17.23	16.98	122.08	-28.42	-283.55	172.89	138.91	33.98	5.088		
4,759.45	4,744.33	4,758.03	4,744.33	17.45	17.18	123.55	-28.42	-283.55	175.77	141.39	34.38	5.112		
4,800.00	4,784.74	4,798.44	4,784.74	17.61	17.32	124.47	-28.42	-283.55	177.64	142.98	34.66	5.126		
4,900.00	4,884.57	4,898.27	4,884.57	17.98	17.66	126.03	-28.42	-283.55	180.98	145.64	35.34	5.121		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3G-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.00	4,984.54	4,998.24	4,984.54	18.33	18.00	126.63	-28.42	-283.55	182.33	146.31	36.02	5.062	
5,015.46	5,000.00	5,013.70	5,000.00	18.38	18.05	0.02	-28.42	-283.55	182.36	146.23	36.13	5.048	
5,100.00	5,084.54	5,098.24	5,084.54	18.65	18.34	0.02	-28.42	-283.55	182.36	145.66	36.69	4.970	
5,200.00	5,184.54	5,198.24	5,184.54	18.98	18.68	0.02	-28.42	-283.55	182.36	144.99	37.36	4.881	
5,300.00	5,284.54	5,298.24	5,284.54	19.30	19.02	0.02	-28.42	-283.55	182.36	144.32	38.04	4.794	
5,400.00	5,384.54	5,398.24	5,384.54	19.63	19.36	0.02	-28.42	-283.55	182.36	143.65	38.71	4.711	
5,500.00	5,484.54	5,498.24	5,484.54	19.95	19.71	0.02	-28.42	-283.55	182.36	142.97	39.39	4.630	
5,600.00	5,584.54	5,598.24	5,584.54	20.28	20.05	0.02	-28.42	-283.55	182.36	142.29	40.06	4.552	
5,700.00	5,684.54	5,698.24	5,684.54	20.61	20.39	0.02	-28.42	-283.55	182.36	141.61	40.74	4.476	
5,800.00	5,784.54	5,798.24	5,784.54	20.94	20.74	0.02	-28.42	-283.55	182.36	140.93	41.42	4.403	
5,900.00	5,884.54	5,898.24	5,884.54	21.27	21.08	0.02	-28.42	-283.55	182.36	140.25	42.10	4.331	
6,000.00	5,984.54	5,998.24	5,984.54	21.60	21.43	0.02	-28.42	-283.55	182.36	139.57	42.78	4.262	
6,100.00	6,084.54	6,098.24	6,084.54	21.94	21.77	0.02	-28.42	-283.55	182.36	138.89	43.47	4.195	
6,200.00	6,184.54	6,198.24	6,184.54	22.27	22.12	0.02	-28.42	-283.55	182.36	138.20	44.15	4.130	
6,300.00	6,284.54	6,298.24	6,284.54	22.60	22.47	0.02	-28.42	-283.55	182.36	137.52	44.84	4.067	
6,400.00	6,384.54	6,398.24	6,384.54	22.94	22.81	0.02	-28.42	-283.55	182.36	136.83	45.52	4.006	
6,500.00	6,484.54	6,498.24	6,484.54	23.27	23.16	0.02	-28.42	-283.55	182.36	136.15	46.21	3.946	
6,600.00	6,584.54	6,598.24	6,584.54	23.61	23.51	0.02	-28.42	-283.55	182.36	135.46	46.90	3.888	
6,608.66	6,593.20	6,606.90	6,593.20	23.64	23.54	0.02	-28.42	-283.55	182.36	135.40	46.96	3.883	
6,709.26	6,693.80	6,706.61	6,693.80	23.98	23.87	1.07	-28.30	-280.22	182.52	134.90	47.61	3.833	
6,750.00	6,734.52	6,746.48	6,732.36	24.11	24.00	-87.13	-28.11	-275.28	182.81	134.96	47.85	3.820	
6,800.00	6,784.30	6,795.13	6,780.16	24.27	24.14	-85.66	-27.77	-266.29	183.36	135.24	48.12	3.811	
6,850.00	6,833.64	6,843.48	6,826.95	24.42	24.29	-84.23	-27.31	-254.16	184.12	135.75	48.37	3.807	
6,900.00	6,882.29	6,891.54	6,872.55	24.57	24.43	-82.84	-26.74	-239.00	185.06	136.47	48.59	3.808	
6,950.00	6,930.03	6,939.33	6,916.78	24.71	24.58	-81.51	-26.06	-220.93	186.17	137.38	48.79	3.816	
7,000.00	6,976.62	6,986.87	6,959.47	24.85	24.72	-80.23	-25.27	-200.08	187.44	138.47	48.97	3.828	
7,050.00	7,021.83	7,034.15	7,000.48	24.98	24.87	-79.03	-24.38	-176.57	188.83	139.71	49.12	3.844	
7,100.00	7,065.44	7,081.21	7,039.67	25.12	25.03	-77.90	-23.39	-150.54	190.34	141.08	49.26	3.864	
7,150.00	7,107.25	7,128.05	7,076.89	25.26	25.21	-76.84	-22.32	-122.14	191.95	142.55	49.40	3.885	
7,200.00	7,147.03	7,174.70	7,112.02	25.41	25.41	-75.87	-21.16	-91.50	193.62	144.07	49.55	3.907	
7,250.00	7,184.61	7,221.16	7,144.96	25.59	25.63	-74.98	-19.92	-58.77	195.35	145.62	49.73	3.928	
7,300.00	7,219.80	7,267.45	7,175.61	25.79	25.89	-74.17	-18.61	-24.11	197.11	147.15	49.96	3.945	
7,350.00	7,252.42	7,313.59	7,203.86	26.05	26.18	-73.45	-17.23	12.34	198.89	148.62	50.26	3.957	
7,400.00	7,282.33	7,359.59	7,229.62	26.35	26.52	-72.82	-15.79	50.41	200.65	150.00	50.65	3.961	
7,450.00	7,309.37	7,405.48	7,252.84	26.72	26.92	-72.27	-14.30	89.96	202.40	151.25	51.15	3.957	
7,500.00	7,333.40	7,450.00	7,272.90	27.16	27.35	-71.82	-12.80	129.67	204.12	152.38	51.74	3.945	
7,550.00	7,354.32	7,496.96	7,291.33	27.66	27.87	-71.43	-11.16	172.81	205.78	153.21	52.57	3.915	
7,600.00	7,372.03	7,542.58	7,306.50	28.24	28.44	-71.14	-9.54	215.80	207.38	153.87	53.51	3.876	
7,650.00	7,386.43	7,588.15	7,318.88	28.90	29.06	-70.94	-7.88	259.62	208.91	154.30	54.61	3.826	
7,700.00	7,397.45	7,633.69	7,328.45	29.62	29.74	-70.81	-6.20	304.10	210.36	154.49	55.87	3.765	
7,750.00	7,405.05	7,679.20	7,335.16	30.41	30.47	-70.77	-4.50	349.08	211.73	154.44	57.29	3.696	
7,800.00	7,409.18	7,724.71	7,339.00	31.26	31.24	-70.81	-2.78	394.39	213.00	154.15	58.85	3.619	
7,834.26	7,410.00	7,755.91	7,339.97	31.86	31.79	-70.88	-1.60	425.54	213.81	153.82	59.99	3.564	
7,900.00	7,410.00	7,820.97	7,340.00	33.09	33.01	-71.04	0.86	490.56	215.52	153.13	62.39	3.454	
8,000.00	7,410.00	7,920.94	7,340.00	35.13	35.03	-71.28	4.63	590.45	218.13	151.80	66.34	3.288	
8,100.00	7,410.00	8,020.90	7,340.00	37.32	37.22	-71.51	8.41	690.34	220.75	150.15	70.61	3.126	
8,200.00	7,410.00	8,120.86	7,340.00	39.66	39.54	-71.73	12.19	790.23	223.38	148.23	75.15	2.973	
8,300.00	7,410.00	8,220.82	7,340.00	42.11	41.98	-71.95	15.97	890.12	226.00	146.09	79.91	2.828	
8,400.00	7,410.00	8,320.78	7,340.00	44.66	44.51	-72.17	19.75	990.01	228.63	143.77	84.86	2.694	
8,500.00	7,410.00	8,420.74	7,340.00	47.29	47.13	-72.37	23.52	1,089.90	231.26	141.28	89.98	2.570	
8,600.00	7,410.00	8,520.71	7,340.00	49.98	49.81	-72.58	27.30	1,189.79	233.90	138.67	95.23	2.456	
8,700.00	7,410.00	8,620.67	7,340.00	52.73	52.55	-72.78	31.08	1,289.68	236.54	135.94	100.60	2.351	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3G-25H-M166 - OH - PLAN #1												Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis		Separation Factor
8,800.00	7,410.00	8,720.63	7,340.00	55.53	55.33	-72.98	34.86	1,389.57	239.18	133.11	106.07	2.255	
8,900.00	7,410.00	8,820.59	7,340.00	58.37	58.16	-73.17	38.64	1,489.46	241.82	130.20	111.62	2.166	
9,000.00	7,410.00	8,920.55	7,340.00	61.25	61.03	-73.36	42.42	1,589.35	244.47	127.22	117.25	2.085	
9,100.00	7,410.00	9,020.52	7,340.00	64.16	63.93	-73.54	46.19	1,689.25	247.12	124.17	122.95	2.010	
9,200.00	7,410.00	9,120.48	7,340.00	67.10	66.85	-73.72	49.97	1,789.14	249.77	121.07	128.70	1.941	
9,300.00	7,410.00	9,220.44	7,340.00	70.06	69.80	-73.89	53.75	1,889.03	252.43	117.92	134.51	1.877	
9,400.00	7,410.00	9,320.40	7,340.00	73.04	72.77	-74.07	57.53	1,988.92	255.08	114.73	140.36	1.817	
9,500.00	7,410.00	9,420.36	7,340.00	76.04	75.75	-74.24	61.31	2,088.81	257.74	111.49	146.25	1.762	
9,600.00	7,410.00	9,520.32	7,340.00	79.06	78.76	-74.40	65.08	2,188.70	260.40	108.23	152.18	1.711	
9,700.00	7,410.00	9,620.29	7,340.00	82.09	81.78	-74.56	68.86	2,288.59	263.07	104.93	158.14	1.664	
9,800.00	7,410.00	9,720.25	7,340.00	85.13	84.81	-74.72	72.64	2,388.48	265.73	101.60	164.13	1.619	
9,900.00	7,410.00	9,820.21	7,340.00	88.18	87.85	-74.88	76.42	2,488.37	268.40	98.25	170.14	1.577	
10,000.00	7,410.00	9,920.17	7,340.00	91.25	90.90	-75.03	80.20	2,588.26	271.07	94.88	176.19	1.539	
10,100.00	7,410.00	10,020.13	7,340.00	94.32	93.96	-75.18	83.98	2,688.15	273.74	91.49	182.25	1.502	
10,200.00	7,410.00	10,120.10	7,340.00	97.40	97.04	-75.32	87.75	2,788.04	276.41	88.08	188.33	1.468 Level 3	
10,300.00	7,410.00	10,220.06	7,340.00	100.50	100.11	-75.47	91.53	2,887.93	279.09	84.65	194.44	1.435 Level 3	
10,400.00	7,410.00	10,320.02	7,340.00	103.59	103.20	-75.61	95.31	2,987.82	281.76	81.20	200.56	1.405 Level 3	
10,500.00	7,410.00	10,419.98	7,340.00	106.70	106.29	-75.75	99.09	3,087.71	284.44	77.75	206.69	1.376 Level 3	
10,600.00	7,410.00	10,519.94	7,340.00	109.81	109.39	-75.88	102.87	3,187.60	287.12	74.27	212.85	1.349 Level 3	
10,700.00	7,410.00	10,619.90	7,340.00	112.92	112.49	-76.02	106.65	3,287.49	289.80	70.79	219.01	1.323 Level 3	
10,800.00	7,410.00	10,719.87	7,340.00	116.04	115.60	-76.15	110.42	3,387.38	292.48	67.30	225.19	1.299 Level 3	
10,900.00	7,410.00	10,819.83	7,340.00	119.17	118.71	-76.28	114.20	3,487.27	295.17	63.79	231.38	1.276 Level 3	
11,000.00	7,410.00	10,919.79	7,340.00	122.30	121.83	-76.40	117.98	3,587.16	297.85	60.28	237.58	1.254 Level 3	
11,100.00	7,410.00	11,019.75	7,340.00	125.43	124.95	-76.53	121.76	3,687.05	300.54	56.75	243.79	1.233 Level 2	
11,200.00	7,410.00	11,119.71	7,340.00	128.57	128.08	-76.65	125.54	3,786.94	303.23	53.22	250.01	1.213 Level 2	
11,300.00	7,410.00	11,219.68	7,340.00	131.71	131.20	-76.77	129.31	3,886.83	305.92	49.68	256.24	1.194 Level 2	
11,400.00	7,410.00	11,319.64	7,340.00	134.85	134.33	-76.89	133.09	3,986.72	308.61	46.13	262.48	1.176 Level 2	
11,500.00	7,410.00	11,419.60	7,340.00	138.00	137.47	-77.00	136.87	4,086.61	311.30	42.58	268.72	1.158 Level 2	
11,600.00	7,410.00	11,519.56	7,340.00	141.14	140.61	-77.11	140.65	4,186.50	314.00	39.02	274.98	1.142 Level 2	
11,700.00	7,410.00	11,619.52	7,340.00	144.30	143.74	-77.23	144.43	4,286.40	316.69	35.45	281.24	1.126 Level 2	
11,800.00	7,410.00	11,719.48	7,340.00	147.45	146.89	-77.34	148.21	4,386.29	319.39	31.88	287.50	1.111 Level 2	
11,906.34	7,410.00	11,825.79	7,340.00	150.80	150.23	-77.45	152.22	4,492.51	322.25	28.08	294.18	1.095 Level 2, SF	



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	1.13	9.85	0.20	9.85					
100.00	100.00	100.00	100.00	0.14	0.14	1.13	9.85	0.20	9.85	9.57	0.28	35.678		
200.00	200.00	200.00	200.00	0.50	0.50	1.13	9.85	0.20	9.85	8.85	0.99	9.918		
300.00	300.00	300.00	300.00	0.85	0.85	1.13	9.85	0.20	9.85	8.14	1.71	5.759		
400.00	400.00	400.00	400.00	1.21	1.21	1.13	9.85	0.20	9.85	7.42	2.43	4.058		
500.00	500.00	500.00	500.00	1.57	1.57	1.13	9.85	0.20	9.85	6.70	3.14	3.132		
600.00	600.00	600.00	600.00	1.93	1.93	1.13	9.85	0.20	9.85	5.99	3.86	2.551		
700.00	700.00	700.00	700.00	2.29	2.29	1.13	9.85	0.20	9.85	5.27	4.58	2.151		
800.00	800.00	800.00	800.00	2.65	2.65	1.13	9.85	0.20	9.85	4.55	5.29	1.860 CC, ES		
900.00	899.98	899.98	899.98	2.99	3.01	134.94	9.85	0.20	11.00	5.01	6.00	1.834		
1,000.00	999.84	1,000.17	1,000.15	3.33	3.35	143.97	9.19	-1.43	13.99	7.30	6.68	2.093		
1,056.01	1,055.67	1,056.33	1,056.25	3.52	3.54	146.42	8.24	-3.75	16.01	8.94	7.07	2.265		
1,100.00	1,099.48	1,100.38	1,100.22	3.67	3.69	147.08	7.23	-6.21	17.51	10.14	7.37	2.376		
1,200.00	1,199.08	1,200.33	1,199.97	4.03	4.04	147.85	4.89	-11.97	20.80	12.74	8.06	2.581		
1,300.00	1,298.69	1,300.27	1,299.73	4.38	4.39	148.41	2.54	-17.72	24.09	15.33	8.76	2.751		
1,400.00	1,398.29	1,400.22	1,399.48	4.74	4.74	148.84	0.20	-23.48	27.38	17.93	9.46	2.895		
1,500.00	1,497.89	1,500.16	1,499.23	5.11	5.10	149.17	-2.15	-29.23	30.68	20.51	10.16	3.018		
1,600.00	1,597.49	1,600.11	1,598.98	5.48	5.45	149.44	-4.49	-34.98	33.97	23.10	10.87	3.124		
1,700.00	1,697.09	1,700.05	1,698.74	5.85	5.81	149.66	-6.84	-40.74	37.27	25.68	11.59	3.217		
1,800.00	1,796.69	1,800.00	1,798.49	6.22	6.17	149.85	-9.18	-46.49	40.56	28.26	12.30	3.298		
1,900.00	1,896.29	1,899.94	1,898.24	6.59	6.53	150.01	-11.53	-52.25	43.86	30.84	13.02	3.370		
2,000.00	1,995.89	1,999.89	1,997.99	6.96	6.90	150.14	-13.87	-58.00	47.15	33.42	13.73	3.434		
2,100.00	2,095.49	2,099.84	2,097.74	7.34	7.26	150.26	-16.22	-63.76	50.45	36.00	14.45	3.491		
2,200.00	2,195.09	2,199.78	2,197.50	7.71	7.62	150.36	-18.56	-69.51	53.75	38.57	15.17	3.542		
2,300.00	2,294.70	2,299.73	2,297.25	8.09	7.99	150.46	-20.91	-75.27	57.04	41.15	15.89	3.589		
2,400.00	2,394.30	2,399.67	2,397.00	8.47	8.35	150.54	-23.25	-81.02	60.34	43.72	16.62	3.631		
2,500.00	2,493.90	2,499.62	2,496.75	8.85	8.72	150.61	-25.60	-86.77	63.64	46.30	17.34	3.670		
2,600.00	2,593.50	2,599.56	2,596.51	9.22	9.09	150.68	-27.94	-92.53	66.93	48.87	18.06	3.706		
2,700.00	2,693.10	2,699.51	2,696.26	9.60	9.45	150.74	-30.29	-98.28	70.23	51.44	18.79	3.738		
2,800.00	2,792.70	2,799.46	2,796.01	9.98	9.82	150.79	-32.63	-104.04	73.53	54.02	19.51	3.768		
2,900.00	2,892.30	2,899.40	2,895.76	10.36	10.19	150.84	-34.98	-109.79	76.83	56.59	20.24	3.796		
3,000.00	2,991.90	2,999.35	2,995.51	10.74	10.55	150.89	-37.32	-115.55	80.12	59.16	20.96	3.822		
3,100.00	3,091.50	3,099.29	3,095.27	11.12	10.92	150.93	-39.67	-121.30	83.42	61.73	21.69	3.846		
3,200.00	3,191.10	3,199.24	3,195.02	11.50	11.29	150.97	-42.01	-127.06	86.72	64.30	22.42	3.869		
3,300.00	3,290.71	3,299.18	3,294.77	11.88	11.66	151.00	-44.36	-132.81	90.02	66.87	23.14	3.890		
3,400.00	3,390.31	3,399.13	3,394.52	12.26	12.03	151.04	-46.70	-138.56	93.31	69.44	23.87	3.909		
3,500.00	3,489.91	3,499.07	3,494.28	12.64	12.39	151.07	-49.05	-144.32	96.61	72.01	24.60	3.928		
3,600.00	3,589.51	3,599.02	3,594.03	13.03	12.76	151.10	-51.40	-150.07	99.91	74.58	25.33	3.945		
3,700.00	3,689.11	3,698.97	3,693.78	13.41	13.13	151.12	-53.74	-155.83	103.21	77.15	26.05	3.961		
3,800.00	3,788.71	3,798.91	3,793.53	13.79	13.50	151.15	-56.09	-161.58	106.50	79.72	26.78	3.977		
3,900.00	3,888.31	3,898.86	3,893.28	14.17	13.87	151.17	-58.43	-167.34	109.80	82.29	27.51	3.991		
4,000.00	3,987.91	3,998.80	3,993.04	14.55	14.24	151.20	-60.78	-173.09	113.10	84.86	28.24	4.005		
4,100.00	4,087.51	4,098.75	4,092.79	14.93	14.61	151.22	-63.12	-178.85	116.40	87.43	28.97	4.018		
4,200.00	4,187.11	4,198.69	4,192.54	15.32	14.98	151.24	-65.47	-184.60	119.69	90.00	29.70	4.031		
4,300.00	4,286.71	4,298.64	4,292.29	15.70	15.35	151.26	-67.81	-190.35	122.99	92.57	30.42	4.043		
4,400.00	4,386.32	4,398.58	4,392.05	16.08	15.71	151.27	-70.16	-196.11	126.29	95.14	31.15	4.054		
4,500.00	4,485.92	4,498.53	4,491.80	16.46	16.08	151.29	-72.50	-201.86	129.59	97.70	31.88	4.065		
4,600.00	4,585.52	4,598.48	4,591.55	16.84	16.45	151.31	-74.85	-207.62	132.88	100.27	32.61	4.075		
4,700.00	4,685.12	4,698.42	4,691.30	17.23	16.82	151.32	-77.19	-213.37	136.18	102.84	33.34	4.085		
4,759.45	4,744.33	4,757.84	4,750.61	17.45	17.04	151.33	-78.59	-216.79	138.14	104.37	33.77	4.090		
4,800.00	4,784.74	4,798.37	4,791.06	17.61	17.19	151.29	-79.54	-219.13	139.23	105.16	34.07	4.086		
4,900.00	4,884.57	4,898.36	4,890.85	17.98	17.56	150.69	-81.88	-224.88	139.76	104.96	34.80	4.016		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.00	4,984.54	4,998.27	4,990.57	18.33	17.93	149.34	-84.23	-230.64	137.30	101.75	35.54	3.863	
5,015.46	5,000.00	5,013.70	5,005.97	18.38	17.99	22.44	-84.59	-231.52	136.65	101.00	35.65	3.833	
5,100.00	5,084.54	5,098.08	5,090.19	18.65	18.30	20.83	-86.57	-236.38	133.01	96.74	36.27	3.667	
5,200.00	5,184.54	5,197.89	5,189.80	18.98	18.67	18.81	-88.91	-242.13	128.85	91.85	37.00	3.483	
5,300.00	5,284.54	5,297.69	5,289.41	19.30	19.04	16.65	-91.25	-247.88	124.85	87.12	37.73	3.309	
5,400.00	5,384.54	5,397.50	5,389.03	19.63	19.41	14.36	-93.60	-253.62	121.05	82.58	38.47	3.147	
5,500.00	5,484.54	5,497.30	5,488.64	19.95	19.78	11.93	-95.94	-259.37	117.45	78.24	39.21	2.996	
5,600.00	5,584.54	5,597.11	5,588.25	20.28	20.15	9.35	-98.28	-265.11	114.07	74.12	39.95	2.855	
5,700.00	5,684.54	5,696.92	5,687.87	20.61	20.52	6.61	-100.62	-270.86	110.95	70.25	40.70	2.726	
5,800.00	5,784.54	5,796.72	5,787.48	20.94	20.89	3.73	-102.96	-276.61	108.08	66.63	41.45	2.608	
5,900.00	5,884.54	5,896.60	5,886.20	21.27	21.25	1.08	-105.01	-281.63	105.80	63.61	42.19	2.508	
6,000.00	5,984.54	5,994.18	5,984.75	21.60	21.59	-0.03	-105.85	-283.69	104.93	62.06	42.88	2.447	
6,039.43	6,023.97	6,033.39	6,023.97	21.73	21.73	-0.05	-105.86	-283.72	104.92	61.78	43.14	2.432	
6,100.00	6,084.54	6,093.97	6,084.54	21.94	21.93	-0.05	-105.86	-283.72	104.92	61.37	43.55	2.409	
6,200.00	6,184.54	6,193.97	6,184.54	22.27	22.26	-0.05	-105.86	-283.72	104.92	60.70	44.22	2.373	
6,300.00	6,284.54	6,293.97	6,284.54	22.60	22.60	-0.05	-105.86	-283.72	104.92	60.02	44.90	2.337	
6,400.00	6,384.54	6,393.97	6,384.54	22.94	22.93	-0.05	-105.86	-283.72	104.92	59.34	45.57	2.302	
6,500.00	6,484.54	6,493.97	6,484.54	23.27	23.27	-0.05	-105.86	-283.72	104.92	58.67	46.25	2.269	
6,600.00	6,584.54	6,593.97	6,584.54	23.61	23.60	-0.05	-105.86	-283.72	104.92	57.99	46.93	2.236	
6,709.26	6,693.80	6,703.23	6,693.80	23.98	23.97	-0.05	-105.86	-283.72	104.92	57.25	47.67	2.201	
6,746.57	6,731.09	6,740.52	6,731.09	24.10	24.10	-90.00	-105.86	-283.72	104.91	56.98	47.93	2.189	
6,750.00	6,734.52	6,743.94	6,734.52	24.11	24.11	-90.10	-105.86	-283.72	104.91	56.96	47.95	2.188	
6,800.00	6,784.30	6,793.72	6,784.30	24.27	24.28	-92.58	-105.86	-283.72	105.02	56.71	48.31	2.174	
6,850.00	6,833.64	6,843.06	6,833.64	24.42	24.44	-96.83	-105.86	-283.72	105.69	57.00	48.69	2.171	
6,900.00	6,882.29	6,892.36	6,882.94	24.57	24.61	-102.54	-105.86	-283.47	107.63	58.56	49.07	2.193	
6,950.00	6,930.03	6,943.06	6,933.53	24.71	24.77	-108.38	-105.83	-280.32	110.88	61.47	49.41	2.244	
7,000.00	6,976.62	6,994.67	6,984.66	24.85	24.93	-113.82	-105.76	-273.45	115.22	65.58	49.64	2.321	
7,050.00	7,021.83	7,047.22	7,036.09	24.98	25.08	-118.80	-105.65	-262.69	120.50	70.78	49.72	2.424	
7,100.00	7,065.44	7,100.76	7,087.53	25.12	25.24	-123.28	-105.50	-247.89	126.51	76.92	49.59	2.551	
7,150.00	7,107.25	7,155.32	7,138.65	25.26	25.39	-127.27	-105.31	-228.89	133.06	83.83	49.22	2.703	
7,200.00	7,147.03	7,210.91	7,189.11	25.41	25.55	-130.79	-105.07	-205.58	139.96	91.36	48.60	2.880	
7,250.00	7,184.61	7,267.56	7,238.51	25.59	25.71	-133.88	-104.79	-177.89	147.04	99.31	47.73	3.081	
7,300.00	7,219.80	7,325.28	7,286.43	25.79	25.89	-136.57	-104.46	-145.74	154.13	107.52	46.61	3.307	
7,350.00	7,252.42	7,384.06	7,332.41	26.05	26.09	-138.89	-104.09	-109.15	161.09	115.81	45.28	3.558	
7,400.00	7,282.33	7,443.88	7,375.96	26.35	26.33	-140.90	-103.67	-68.17	167.78	124.01	43.77	3.833	
7,450.00	7,309.37	7,504.70	7,416.58	26.72	26.63	-142.62	-103.21	-22.93	174.08	131.93	42.14	4.131	
7,500.00	7,333.40	7,566.48	7,453.76	27.16	27.01	-144.07	-102.71	26.39	179.87	139.40	40.47	4.444	
7,550.00	7,354.32	7,629.14	7,486.98	27.66	27.48	-145.28	-102.17	79.49	185.07	146.22	38.85	4.764	
7,600.00	7,372.03	7,692.60	7,515.77	28.24	28.06	-146.27	-101.60	136.02	189.58	152.21	37.37	5.072	
7,650.00	7,386.43	7,756.75	7,539.68	28.90	28.76	-147.05	-100.99	195.52	193.33	157.14	36.19	5.342	
7,700.00	7,397.45	7,821.47	7,558.30	29.62	29.59	-147.64	-100.36	257.47	196.26	160.84	35.42	5.541	
7,750.00	7,405.05	7,886.61	7,571.32	30.41	30.54	-148.05	-99.71	321.28	198.33	163.14	35.19	5.636	
7,800.00	7,409.18	7,952.04	7,578.51	31.26	31.59	-148.27	-99.05	386.28	199.50	163.93	35.56	5.610	
7,834.26	7,410.00	7,996.95	7,580.00	31.86	32.36	-148.32	-98.60	431.16	199.77	163.58	36.19	5.520	
7,900.00	7,410.00	8,062.99	7,580.00	33.09	33.60	-148.32	-97.93	497.20	199.77	162.15	37.62	5.310	
8,000.00	7,410.00	8,162.99	7,580.00	35.13	35.59	-148.32	-96.91	597.19	199.77	159.82	39.94	5.001	
8,100.00	7,410.00	8,262.99	7,580.00	37.32	37.75	-148.32	-95.89	697.19	199.77	157.32	42.45	4.706	
8,200.00	7,410.00	8,362.99	7,580.00	39.66	40.05	-148.32	-94.88	797.18	199.77	154.66	45.11	4.429	
8,300.00	7,410.00	8,462.99	7,580.00	42.11	42.47	-148.32	-93.86	897.18	199.77	151.87	47.89	4.171	
8,400.00	7,410.00	8,562.99	7,580.00	44.66	44.99	-148.32	-92.84	997.17	199.77	148.99	50.78	3.934	
8,500.00	7,410.00	8,662.99	7,580.00	47.29	47.59	-148.32	-91.83	1,097.17	199.77	146.01	53.76	3.716	
8,600.00	7,410.00	8,762.99	7,580.00	49.98	50.26	-148.32	-90.81	1,197.16	199.77	142.96	56.81	3.517	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3H-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Total Uncertainty Axis	Separation Factor
8,700.00	7,410.00	8,862.99	7,580.00	52.73	52.99	-148.32	-89.80	1,297.16	199.77	139.85		59.92	3.334
8,800.00	7,410.00	8,962.99	7,580.00	55.53	55.77	-148.32	-88.78	1,397.15	199.77	136.68		63.09	3.166
8,900.00	7,410.00	9,062.99	7,580.00	58.37	58.60	-148.32	-87.76	1,497.15	199.77	133.46		66.30	3.013
9,000.00	7,410.00	9,162.99	7,580.00	61.25	61.46	-148.32	-86.75	1,597.14	199.77	130.21		69.55	2.872
9,100.00	7,410.00	9,262.99	7,580.00	64.16	64.35	-148.32	-85.73	1,697.14	199.77	126.93		72.84	2.743
9,200.00	7,410.00	9,362.99	7,580.00	67.10	67.28	-148.32	-84.71	1,797.13	199.77	123.61		76.16	2.623
9,300.00	7,410.00	9,462.99	7,580.00	70.06	70.22	-148.32	-83.70	1,897.13	199.77	120.27		79.50	2.513
9,400.00	7,410.00	9,562.99	7,580.00	73.04	73.19	-148.32	-82.68	1,997.12	199.77	116.90		82.87	2.411
9,500.00	7,410.00	9,662.99	7,580.00	76.04	76.18	-148.32	-81.66	2,097.12	199.77	113.51		86.25	2.316
9,600.00	7,410.00	9,762.99	7,580.00	79.06	79.19	-148.32	-80.65	2,197.11	199.77	110.11		89.66	2.228
9,700.00	7,410.00	9,862.99	7,580.00	82.09	82.21	-148.32	-79.63	2,297.11	199.77	106.69		93.08	2.146
9,800.00	7,410.00	9,962.99	7,580.00	85.13	85.24	-148.32	-78.62	2,397.10	199.77	103.26		96.51	2.070
9,900.00	7,410.00	10,062.99	7,580.00	88.18	88.29	-148.32	-77.60	2,497.10	199.77	99.81		99.96	1.999
10,000.00	7,410.00	10,162.99	7,580.00	91.25	91.35	-148.32	-76.58	2,597.09	199.77	96.35		103.42	1.932
10,100.00	7,410.00	10,262.99	7,580.00	94.32	94.41	-148.32	-75.57	2,697.09	199.77	92.88		106.88	1.869
10,200.00	7,410.00	10,362.99	7,580.00	97.40	97.49	-148.32	-74.55	2,797.08	199.77	89.40		110.36	1.810
10,300.00	7,410.00	10,462.99	7,580.00	100.50	100.58	-148.32	-73.53	2,897.07	199.77	85.92		113.85	1.755
10,400.00	7,410.00	10,562.99	7,580.00	103.59	103.67	-148.32	-72.52	2,997.07	199.77	82.42		117.34	1.702
10,500.00	7,410.00	10,662.99	7,580.00	106.70	106.77	-148.32	-71.50	3,097.06	199.77	78.92		120.85	1.653
10,600.00	7,410.00	10,762.99	7,580.00	109.81	109.87	-148.32	-70.48	3,197.06	199.77	75.41		124.35	1.606
10,700.00	7,410.00	10,862.99	7,580.00	112.92	112.98	-148.32	-69.47	3,297.05	199.77	71.90		127.87	1.562
10,800.00	7,410.00	10,962.99	7,580.00	116.04	116.10	-148.32	-68.45	3,397.05	199.77	68.38		131.39	1.520
10,900.00	7,410.00	11,062.99	7,580.00	119.17	119.22	-148.32	-67.44	3,497.04	199.77	64.85		134.91	1.481 Level 3
11,000.00	7,410.00	11,162.99	7,580.00	122.30	122.34	-148.32	-66.42	3,597.04	199.77	61.32		138.44	1.443 Level 3
11,100.00	7,410.00	11,262.99	7,580.00	125.43	125.47	-148.32	-65.40	3,697.03	199.77	57.79		141.98	1.407 Level 3
11,200.00	7,410.00	11,362.99	7,580.00	128.57	128.61	-148.32	-64.39	3,797.03	199.77	54.25		145.51	1.373 Level 3
11,300.00	7,410.00	11,462.99	7,580.00	131.71	131.74	-148.32	-63.37	3,897.02	199.77	50.71		149.06	1.340 Level 3
11,400.00	7,410.00	11,562.99	7,580.00	134.85	134.88	-148.32	-62.35	3,997.02	199.77	47.16		152.60	1.309 Level 3
11,500.00	7,410.00	11,662.99	7,580.00	138.00	138.02	-148.32	-61.34	4,097.01	199.77	43.62		156.15	1.279 Level 3
11,600.00	7,410.00	11,762.99	7,580.00	141.14	141.17	-148.32	-60.32	4,197.01	199.77	40.07		159.70	1.251 Level 3
11,700.00	7,410.00	11,862.99	7,580.00	144.30	144.32	-148.32	-59.30	4,297.00	199.77	36.51		163.25	1.224 Level 2
11,800.00	7,410.00	11,962.99	7,580.00	147.45	147.47	-148.32	-58.29	4,397.00	199.77	32.95		166.81	1.198 Level 2
11,906.34	7,410.00	12,069.34	7,580.00	150.80	150.82	-148.32	-57.21	4,503.33	199.77	29.17		170.60	1.171 Level 2, SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	179.50	-9.83	0.08	9.83	9.56	0.28	35.617	
100.00	100.00	100.00	100.00	0.14	0.14	179.50	-9.83	0.08	9.83	8.84	0.99	9.901	
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-9.83	0.08	9.83	8.12	1.71	5.750	
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-9.83	0.08	9.83	7.40	2.43	4.051	
400.00	400.00	400.00	400.00	1.21	1.21	179.50	-9.83	0.08	9.83	6.69	3.14	3.127	
500.00	500.00	500.00	500.00	1.57	1.57	179.50	-9.83	0.08	9.83	5.97	3.86	2.546	
600.00	600.00	600.00	600.00	1.93	1.93	179.50	-9.83	0.08	9.83	5.25	4.58	2.148 CC	
700.00	700.00	700.00	700.00	2.29	2.29	179.50	-9.83	0.08	9.83	6.03	5.29	2.141	
800.00	800.00	799.68	799.66	2.65	2.63	-175.59	-11.28	-0.87	11.32	6.80	5.98	2.473	
900.00	899.98	899.20	899.04	2.99	2.96	-44.23	-15.61	-3.73	14.78	8.80	6.67	2.841	
1,000.00	999.84	998.63	998.09	3.33	3.31	-44.42	-22.80	-8.48	18.94	12.27	7.05	2.973	
1,056.01	1,055.67	1,054.60	1,053.77	3.52	3.50	-46.47	-27.54	-11.60	20.95	13.90	7.35	3.029	
1,100.00	1,099.48	1,098.56	1,097.51	3.67	3.65	-48.66	-31.26	-14.06	22.25	14.91	8.04	3.149	
1,200.00	1,199.08	1,198.50	1,196.93	4.03	4.01	-52.79	-39.71	-19.64	25.32	17.28	8.75	3.258	
1,300.00	1,298.69	1,298.44	1,296.35	4.38	4.38	-56.01	-48.17	-25.23	28.49	19.75	9.46	3.354	
1,400.00	1,398.29	1,398.38	1,395.78	4.74	4.75	-58.58	-56.63	-30.81	31.74	22.28	10.19	3.440	
1,500.00	1,497.89	1,498.31	1,495.20	5.11	5.12	-60.68	-65.08	-36.40	35.04	24.85	10.92	3.515	
1,600.00	1,597.49	1,598.25	1,594.62	5.48	5.49	-62.40	-73.54	-41.98	38.37	27.46	11.65	3.583	
1,700.00	1,697.09	1,698.19	1,694.05	5.85	5.87	-63.86	-82.00	-47.56	41.74	30.09	12.39	3.643	
1,800.00	1,796.69	1,798.13	1,793.47	6.22	6.25	-65.09	-90.46	-53.15	45.12	32.74	13.13	3.696	
1,900.00	1,896.29	1,898.07	1,892.89	6.59	6.63	-66.15	-98.91	-58.73	48.53	35.40	13.87	3.745	
2,000.00	1,995.89	1,998.01	1,992.31	6.96	7.01	-67.07	-107.37	-64.31	51.95	38.08	14.62	3.788	
2,100.00	2,095.49	2,097.94	2,091.74	7.34	7.39	-67.88	-115.83	-69.90	55.38	40.76	15.37	3.828	
2,200.00	2,195.09	2,197.88	2,191.16	7.71	7.78	-68.59	-124.28	-75.48	58.82	43.45	16.12	3.864	
2,300.00	2,294.70	2,297.82	2,290.58	8.09	8.16	-69.23	-132.74	-81.06	62.27	46.15	16.87	3.896	
2,400.00	2,394.30	2,397.76	2,390.01	8.47	8.54	-69.80	-141.20	-86.65	65.73	48.86	17.62	3.926	
2,500.00	2,493.90	2,497.70	2,489.43	8.85	8.93	-70.31	-149.65	-92.23	69.19	51.57	18.38	3.954	
2,600.00	2,593.50	2,597.64	2,588.85	9.22	9.31	-70.77	-158.11	-97.81	72.66	54.28	19.13	3.979	
2,700.00	2,693.10	2,697.57	2,688.28	9.60	9.70	-71.19	-166.57	-103.40	76.13	57.00	19.89	4.003	
2,800.00	2,792.70	2,797.51	2,787.70	9.98	10.09	-71.57	-175.03	-108.98	79.60	59.72	20.64	4.024	
2,900.00	2,892.30	2,897.45	2,887.12	10.36	10.47	-71.93	-183.48	-114.57	83.08	62.44	21.40	4.045	
3,000.00	2,991.90	2,997.39	2,986.55	10.74	10.86	-72.25	-191.94	-120.15	86.56	65.16	22.16	4.064	
3,100.00	3,091.50	3,097.33	3,085.97	11.12	11.25	-72.55	-200.40	-125.73	90.05	67.89	22.92	4.081	
3,200.00	3,191.10	3,197.26	3,185.39	11.50	11.63	-72.82	-208.85	-131.32	93.53	70.61	23.68	4.098	
3,300.00	3,290.71	3,297.20	3,284.82	11.88	12.02	-73.08	-217.31	-136.90	97.02	73.34	24.44	4.113	
3,400.00	3,390.31	3,397.14	3,384.24	12.26	12.41	-73.32	-225.77	-142.48	100.51	76.07	25.20	4.127	
3,500.00	3,489.91	3,497.08	3,483.66	12.64	12.80	-73.54	-234.23	-148.07	104.00	78.80	25.96	4.141	
3,600.00	3,589.51	3,597.02	3,583.08	13.03	13.19	-73.75	-242.68	-153.65	107.49	81.54	26.72	4.154	
3,700.00	3,689.11	3,696.96	3,682.51	13.41	13.58	-73.94	-251.14	-159.23	110.99	84.27	27.48	4.166	
3,800.00	3,788.71	3,796.89	3,781.93	13.79	13.96	-74.13	-259.60	-164.82	114.48	87.00	28.24	4.178	
3,900.00	3,888.31	3,896.83	3,881.35	14.17	14.35	-74.30	-268.05	-170.40	117.98	89.74	29.00	4.189	
4,000.00	3,987.91	3,996.77	3,980.78	14.55	14.74	-74.46	-276.51	-175.98	121.48	92.47	29.76	4.199	
4,100.00	4,087.51	4,096.71	4,080.20	14.93	15.13	-74.61	-284.97	-181.57	124.98	95.21	30.53	4.209	
4,200.00	4,187.11	4,196.65	4,179.62	15.32	15.52	-74.76	-293.42	-187.15	128.48	97.95	31.29	4.218	
4,300.00	4,286.71	4,296.59	4,279.05	15.70	15.91	-74.90	-301.88	-192.74	131.98	100.69	32.05	4.227	
4,400.00	4,386.32	4,396.52	4,378.47	16.08	16.30	-75.03	-310.34	-198.32	135.48	103.42	32.81	4.235	
4,500.00	4,485.92	4,496.46	4,477.89	16.46	16.69	-75.15	-318.80	-203.90	138.98	106.16	33.58	4.243	
4,600.00	4,585.52	4,596.40	4,577.32	16.84	17.08	-75.27	-327.25	-209.49	142.48	108.90	34.34	4.251	
4,700.00	4,685.12	4,696.34	4,676.74	17.23	17.47	-75.38	-335.71	-215.07	145.98	111.64	34.79	4.255	
4,759.45	4,744.33	4,755.75	4,735.85	17.45	17.70	-75.44	-340.74	-218.39	148.06	113.27	35.10	4.261	
4,800.00	4,784.74	4,796.27	4,776.16	17.61	17.85	-75.41	-344.17	-220.65	149.56	114.46	35.83	4.295	
4,900.00	4,884.57	4,896.14	4,875.51	17.98	18.24	-74.45	-352.62	-226.23	153.88	118.05			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.00	4,984.54	4,995.81	4,974.67	18.33	18.63	-72.38	-361.05	-231.80	159.28	122.77	36.51	4.363	
5,015.46	5,000.00	5,011.19	4,989.97	18.38	18.69	161.41	-362.35	-232.66	160.23	123.62	36.61	4.377	
5,100.00	5,084.54	5,095.30	5,073.64	18.65	19.02	163.74	-369.47	-237.36	165.66	128.51	37.14	4.460	
5,200.00	5,184.54	5,194.78	5,172.61	18.98	19.41	166.31	-377.89	-242.92	172.41	134.63	37.78	4.563	
5,300.00	5,284.54	5,294.27	5,271.58	19.30	19.80	168.67	-386.31	-248.48	179.48	141.06	38.42	4.671	
5,400.00	5,384.54	5,393.75	5,370.56	19.63	20.18	170.86	-394.73	-254.03	186.84	147.77	39.07	4.782	
5,500.00	5,484.54	5,493.24	5,469.53	19.95	20.57	172.88	-403.15	-259.59	194.44	154.73	39.72	4.896	
5,600.00	5,584.54	5,592.72	5,568.50	20.28	20.96	174.74	-411.56	-265.15	202.27	161.90	40.37	5.011	
5,700.00	5,684.54	5,692.20	5,667.47	20.61	21.35	176.47	-419.98	-270.71	210.30	169.27	41.02	5.126	
5,800.00	5,784.54	5,795.48	5,770.28	20.94	21.75	178.02	-428.18	-276.12	218.00	176.29	41.71	5.226	
5,900.00	5,884.54	5,902.03	5,876.62	21.27	22.14	179.00	-433.66	-279.74	223.06	180.65	42.41	5.260	
6,000.00	5,984.54	6,008.92	5,983.46	21.60	22.51	179.38	-435.84	-281.18	225.08	182.01	43.07	5.226	
6,100.00	6,084.54	6,109.99	6,084.54	21.94	22.83	179.38	-435.88	-281.21	225.11	181.39	43.72	5.149	
6,200.00	6,184.54	6,209.99	6,184.54	22.27	23.14	179.38	-435.88	-281.21	225.11	180.73	44.38	5.072	
6,300.00	6,284.54	6,309.99	6,284.54	22.60	23.45	179.38	-435.88	-281.21	225.11	180.07	45.04	4.998	
6,400.00	6,384.54	6,409.99	6,384.54	22.94	23.76	179.38	-435.88	-281.21	225.11	179.41	45.71	4.925	
6,500.00	6,484.54	6,509.99	6,484.54	23.27	24.08	179.38	-435.88	-281.21	225.11	178.74	46.37	4.854	
6,600.00	6,584.54	6,609.99	6,584.54	23.61	24.39	179.38	-435.88	-281.21	225.11	178.07	47.04	4.786	
6,610.91	6,595.45	6,620.90	6,595.45	23.65	24.43	179.38	-435.88	-281.21	225.11	178.00	47.11	4.778	
6,709.26	6,693.80	6,719.02	6,693.46	23.98	24.73	178.52	-435.85	-277.81	225.14	177.35	47.79	4.711	
6,750.00	6,734.52	6,759.25	6,733.37	24.11	24.85	88.10	-435.80	-272.77	225.24	177.16	48.08	4.685	
6,800.00	6,784.30	6,808.35	6,781.59	24.27	24.99	86.89	-435.70	-263.61	225.45	177.03	48.42	4.656	
6,850.00	6,833.64	6,857.12	6,828.77	24.42	25.12	85.70	-435.58	-251.25	225.76	177.01	48.75	4.631	
6,900.00	6,882.29	6,905.60	6,874.71	24.57	25.25	84.53	-435.42	-235.82	226.15	177.10	49.06	4.610	
6,950.00	6,930.03	6,953.79	6,919.24	24.71	25.37	83.40	-435.23	-217.43	226.63	177.28	49.35	4.592	
7,000.00	6,976.62	7,001.70	6,962.19	24.85	25.48	82.30	-435.02	-196.23	227.18	177.55	49.62	4.578	
7,050.00	7,021.83	7,050.00	7,003.96	24.98	25.59	81.24	-434.77	-171.99	227.78	177.89	49.89	4.565	
7,100.00	7,065.44	7,096.75	7,042.74	25.12	25.68	80.25	-434.51	-145.90	228.43	178.30	50.14	4.556	
7,150.00	7,107.25	7,143.91	7,080.06	25.26	25.78	79.30	-434.21	-117.07	229.12	178.73	50.39	4.547	
7,200.00	7,147.03	7,190.86	7,115.24	25.41	25.88	78.40	-433.90	-86.00	229.83	179.18	50.65	4.537	
7,250.00	7,184.61	7,237.61	7,148.18	25.59	25.99	77.56	-433.56	-52.84	230.55	179.61	50.94	4.526	
7,300.00	7,219.80	7,284.16	7,178.76	25.79	26.12	76.78	-433.20	-17.75	231.26	179.99	51.27	4.510	
7,350.00	7,252.42	7,330.55	7,206.90	26.05	26.29	76.07	-432.83	19.11	231.96	180.29	51.66	4.490	
7,400.00	7,282.33	7,376.78	7,232.51	26.35	26.54	75.42	-432.44	57.59	232.62	180.49	52.14	4.462	
7,450.00	7,309.37	7,422.86	7,255.51	26.72	26.88	74.84	-432.03	97.51	233.25	180.54	52.70	4.426	
7,500.00	7,333.40	7,468.83	7,275.86	27.16	27.28	74.33	-431.61	138.72	233.82	180.43	53.39	4.380	
7,550.00	7,354.32	7,514.69	7,293.48	27.66	27.76	73.89	-431.18	181.05	234.33	180.14	54.20	4.324	
7,600.00	7,372.03	7,560.45	7,308.32	28.24	28.31	73.51	-430.74	224.33	234.77	179.63	55.14	4.258	
7,650.00	7,386.43	7,606.14	7,320.36	28.90	28.92	73.21	-430.30	268.39	235.14	178.91	56.23	4.182	
7,700.00	7,397.45	7,650.00	7,329.25	29.62	29.56	72.99	-429.86	311.33	235.43	178.01	57.42	4.100	
7,750.00	7,405.05	7,697.36	7,335.88	30.41	30.31	72.83	-429.38	358.21	235.62	176.78	58.85	4.004	
7,800.00	7,409.18	7,742.92	7,339.31	31.26	31.09	72.74	-428.92	403.63	235.73	175.37	60.35	3.906	
7,834.26	7,410.00	7,774.25	7,340.00	31.86	31.64	72.73	-428.60	434.96	235.75	174.29	61.45	3.836	
7,834.42	7,410.00	7,774.27	7,340.00	31.87	31.64	72.73	-428.60	434.97	235.75	174.29	61.46	3.836	
7,900.00	7,410.00	7,839.85	7,340.00	33.09	32.89	72.73	-427.94	500.55	235.75	171.92	63.83	3.693	
8,000.00	7,410.00	7,939.85	7,340.00	35.13	34.92	72.73	-426.92	600.55	235.75	168.03	67.71	3.482	
8,100.00	7,410.00	8,039.85	7,340.00	37.32	37.12	72.73	-425.90	700.54	235.75	163.84	71.91	3.278	
8,200.00	7,410.00	8,139.85	7,340.00	39.66	39.46	72.73	-424.89	800.54	235.75	159.37	76.37	3.087	
8,300.00	7,410.00	8,239.85	7,340.00	42.11	41.91	72.73	-423.87	900.53	235.75	154.69	81.06	2.908	
8,400.00	7,410.00	8,339.85	7,340.00	44.66	44.45	72.73	-422.85	1,000.53	235.75	149.83	85.92	2.744	
8,500.00	7,410.00	8,439.85	7,340.00	47.29	47.08	72.73	-421.84	1,100.52	235.75	144.81	90.94	2.592	
8,600.00	7,410.00	8,539.85	7,340.00	49.98	49.78	72.73	-420.82	1,200.52	235.75	139.66	96.09	2.453	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3J-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,700.00	7,410.00	8,639.85	7,340.00	52.73	52.53	72.73	-419.81	1,300.51	235.75	134.40	101.35	2.326		
8,800.00	7,410.00	8,739.85	7,340.00	55.53	55.33	72.73	-418.79	1,400.51	235.75	129.04	106.71	2.209		
8,900.00	7,410.00	8,839.85	7,340.00	58.37	58.18	72.73	-417.77	1,500.50	235.75	123.61	112.14	2.102		
9,000.00	7,410.00	8,939.85	7,340.00	61.25	61.06	72.73	-416.76	1,600.50	235.75	118.10	117.64	2.004		
9,100.00	7,410.00	9,039.85	7,340.00	64.16	63.97	72.73	-415.74	1,700.49	235.75	112.54	123.21	1.913		
9,200.00	7,410.00	9,139.85	7,340.00	67.10	66.91	72.73	-414.72	1,800.49	235.75	106.92	128.82	1.830		
9,300.00	7,410.00	9,239.85	7,340.00	70.06	69.87	72.73	-413.71	1,900.48	235.75	101.26	134.49	1.753		
9,400.00	7,410.00	9,339.85	7,340.00	73.04	72.85	72.73	-412.69	2,000.48	235.75	95.56	140.19	1.682		
9,500.00	7,410.00	9,439.85	7,340.00	76.04	75.85	72.73	-411.68	2,100.47	235.75	89.82	145.93	1.616		
9,600.00	7,410.00	9,539.85	7,340.00	79.06	78.87	72.73	-410.66	2,200.47	235.75	84.06	151.69	1.554		
9,700.00	7,410.00	9,639.85	7,340.00	82.09	81.90	72.73	-409.64	2,300.46	235.75	78.26	157.49	1.497 Level 3		
9,800.00	7,410.00	9,739.85	7,340.00	85.13	84.94	72.73	-408.63	2,400.45	235.75	72.44	163.31	1.444 Level 3		
9,900.00	7,410.00	9,839.85	7,340.00	88.18	88.00	72.73	-407.61	2,500.45	235.75	66.59	169.16	1.394 Level 3		
10,000.00	7,410.00	9,939.85	7,340.00	91.25	91.07	72.73	-406.59	2,600.44	235.75	60.73	175.02	1.347 Level 3		
10,100.00	7,410.00	10,039.85	7,340.00	94.32	94.14	72.73	-405.58	2,700.44	235.75	54.85	180.90	1.303 Level 3		
10,200.00	7,410.00	10,139.85	7,340.00	97.40	97.22	72.73	-404.56	2,800.43	235.75	48.95	186.80	1.262 Level 3		
10,300.00	7,410.00	10,239.85	7,340.00	100.50	100.32	72.73	-403.55	2,900.43	235.75	43.03	192.72	1.223 Level 2		
10,400.00	7,410.00	10,339.85	7,340.00	103.59	103.41	72.73	-402.53	3,000.42	235.75	37.11	198.64	1.187 Level 2		
10,500.00	7,410.00	10,439.85	7,340.00	106.70	106.52	72.73	-401.51	3,100.42	235.75	31.17	204.58	1.152 Level 2		
10,600.00	7,410.00	10,539.85	7,340.00	109.81	109.63	72.73	-400.50	3,200.41	235.75	25.21	210.54	1.120 Level 2		
10,700.00	7,410.00	10,639.85	7,340.00	112.92	112.75	72.73	-399.48	3,300.41	235.75	19.25	216.50	1.089 Level 2		
10,800.00	7,410.00	10,739.85	7,340.00	116.04	115.87	72.73	-398.46	3,400.40	235.75	13.28	222.47	1.060 Level 2		
10,900.00	7,410.00	10,839.85	7,340.00	119.17	118.99	72.73	-397.45	3,500.40	235.75	7.30	228.45	1.032 Level 2		
11,000.00	7,410.00	10,939.85	7,340.00	122.30	122.12	72.73	-396.43	3,600.39	235.75	1.31	234.44	1.006 Level 2		
11,100.00	7,410.00	11,039.85	7,340.00	125.43	125.26	72.73	-395.42	3,700.39	235.75	-4.68	240.43	0.981 Level 1		
11,200.00	7,410.00	11,139.85	7,340.00	128.57	128.39	72.73	-394.40	3,800.38	235.75	-10.69	246.44	0.957 Level 1		
11,300.00	7,410.00	11,239.85	7,340.00	131.71	131.53	72.73	-393.38	3,900.38	235.75	-16.70	252.45	0.934 Level 1		
11,400.00	7,410.00	11,339.85	7,340.00	134.85	134.68	72.73	-392.37	4,000.37	235.75	-22.71	258.46	0.912 Level 1		
11,500.00	7,410.00	11,439.85	7,340.00	138.00	137.82	72.73	-391.35	4,100.37	235.75	-28.73	264.48	0.891 Level 1		
11,600.00	7,410.00	11,539.85	7,340.00	141.14	140.97	72.73	-390.33	4,200.36	235.75	-34.76	270.51	0.872 Level 1		
11,700.00	7,410.00	11,639.85	7,340.00	144.30	144.12	72.73	-389.32	4,300.36	235.75	-40.79	276.54	0.852 Level 1		
11,800.00	7,410.00	11,739.85	7,340.00	147.45	147.28	72.73	-388.30	4,400.35	235.75	-46.83	282.58	0.834 Level 1		
11,811.42	7,410.00	11,751.27	7,340.00	147.81	147.64	72.73	-388.19	4,411.77	235.75	-47.52	283.27	0.832 Level 1		
11,906.34	7,410.00	11,845.06	7,340.00	150.80	150.00	72.73	-387.23	4,505.55	235.76	-52.64	288.40	0.817 Level 1, ES, SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3K-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	179.50	-20.03	0.17	20.03					
100.00	100.00	100.00	100.00	0.14	0.14	179.50	-20.03	0.17	20.03	19.75	0.28	72.554		
200.00	200.00	200.00	200.00	0.50	0.50	179.50	-20.03	0.17	20.03	19.03	0.99	20.169		
300.00	300.00	300.00	300.00	0.85	0.85	179.50	-20.03	0.17	20.03	18.32	1.71	11.712		
400.00	400.00	400.00	400.00	1.21	1.21	179.50	-20.03	0.17	20.03	17.60	2.43	8.252		
500.00	500.00	500.00	500.00	1.57	1.57	179.50	-20.03	0.17	20.03	16.88	3.14	6.370		
600.00	600.00	600.00	600.00	1.93	1.93	179.50	-20.03	0.17	20.03	16.17	3.86	5.187 CC, ES		
700.00	700.00	699.33	699.31	2.29	2.27	-178.65	-21.61	-0.51	21.62	17.05	4.57	4.732		
800.00	800.00	798.41	798.25	2.65	2.60	-174.46	-26.33	-2.55	26.51	21.23	5.28	5.019		
900.00	899.98	897.16	896.63	2.99	2.94	-45.46	-34.16	-5.94	33.60	27.61	5.99	5.610		
1,000.00	999.84	995.60	994.34	3.33	3.29	-46.03	-45.06	-10.65	41.57	34.88	6.69	6.217		
1,056.01	1,055.67	1,051.35	1,049.55	3.52	3.50	-47.26	-52.18	-13.73	46.00	38.94	7.07	6.510		
1,100.00	1,099.48	1,095.22	1,092.99	3.67	3.66	-48.48	-57.80	-16.16	49.22	41.85	7.36	6.683		
1,200.00	1,199.08	1,194.92	1,191.72	4.03	4.04	-50.74	-70.55	-21.67	56.59	48.53	8.06	7.024		
1,300.00	1,298.69	1,294.63	1,290.45	4.38	4.42	-52.48	-83.30	-27.19	64.03	55.27	8.76	7.308		
1,400.00	1,398.29	1,394.33	1,389.19	4.74	4.81	-53.86	-96.06	-32.70	71.52	62.04	9.47	7.548		
1,500.00	1,497.89	1,494.04	1,487.92	5.11	5.20	-54.98	-108.81	-38.22	79.04	68.84	10.20	7.752		
1,600.00	1,597.49	1,593.75	1,586.65	5.48	5.60	-55.90	-121.56	-43.73	86.58	75.66	10.92	7.927		
1,700.00	1,697.09	1,693.45	1,685.39	5.85	6.00	-56.67	-134.32	-49.24	94.14	82.49	11.65	8.079		
1,800.00	1,796.69	1,793.16	1,784.12	6.22	6.40	-57.33	-147.07	-54.76	101.72	89.33	12.39	8.211		
1,900.00	1,896.29	1,892.86	1,882.85	6.59	6.80	-57.90	-159.82	-60.27	109.31	96.18	13.13	8.327		
2,000.00	1,995.89	1,992.57	1,981.59	6.96	7.21	-58.39	-172.58	-65.79	116.91	103.04	13.87	8.430		
2,100.00	2,095.49	2,092.28	2,080.32	7.34	7.61	-58.82	-185.33	-71.30	124.51	109.90	14.61	8.521		
2,200.00	2,195.09	2,191.98	2,179.05	7.71	8.02	-59.21	-198.08	-76.82	132.13	116.77	15.36	8.603		
2,300.00	2,294.70	2,291.69	2,277.79	8.09	8.43	-59.55	-210.84	-82.33	139.74	123.64	16.11	8.677		
2,400.00	2,394.30	2,391.40	2,376.52	8.47	8.84	-59.85	-223.59	-87.84	147.37	130.51	16.85	8.744		
2,500.00	2,493.90	2,491.10	2,475.25	8.85	9.25	-60.13	-236.34	-93.36	154.99	137.39	17.60	8.804		
2,600.00	2,593.50	2,590.81	2,573.99	9.22	9.66	-60.38	-249.10	-98.87	162.62	144.26	18.36	8.859		
2,700.00	2,693.10	2,690.51	2,672.72	9.60	10.07	-60.61	-261.85	-104.39	170.25	151.14	19.11	8.910		
2,800.00	2,792.70	2,790.22	2,771.45	9.98	10.48	-60.82	-274.60	-109.90	177.89	158.03	19.86	8.956		
2,900.00	2,892.30	2,889.93	2,870.19	10.36	10.89	-61.01	-287.36	-115.42	185.52	164.91	20.62	8.999		
3,000.00	2,991.90	2,989.63	2,968.92	10.74	11.30	-61.18	-300.11	-120.93	193.16	171.79	21.37	9.039		
3,100.00	3,091.50	3,089.34	3,067.65	11.12	11.71	-61.34	-312.86	-126.45	200.80	178.68	22.13	9.075		
3,200.00	3,191.10	3,189.04	3,166.39	11.50	12.12	-61.50	-325.62	-131.96	208.44	185.56	22.88	9.109		
3,300.00	3,290.71	3,288.75	3,265.12	11.88	12.53	-61.64	-338.37	-137.47	216.09	192.45	23.64	9.141		
3,400.00	3,390.31	3,388.46	3,363.85	12.26	12.94	-61.77	-351.12	-142.99	223.73	199.33	24.40	9.171		
3,500.00	3,489.91	3,488.16	3,462.59	12.64	13.36	-61.89	-363.88	-148.50	231.37	206.22	25.15	9.199		
3,600.00	3,589.51	3,587.87	3,561.32	13.03	13.77	-62.00	-376.63	-154.02	239.02	213.11	25.91	9.225		
3,700.00	3,689.11	3,687.58	3,660.05	13.41	14.18	-62.11	-389.38	-159.53	246.67	220.00	26.67	9.249		
3,800.00	3,788.71	3,787.28	3,758.79	13.79	14.59	-62.21	-402.14	-165.05	254.31	226.89	27.43	9.272		
3,900.00	3,888.31	3,886.99	3,857.52	14.17	15.01	-62.30	-414.89	-170.56	261.96	233.78	28.19	9.294		
4,000.00	3,987.91	3,986.69	3,956.25	14.55	15.42	-62.39	-427.64	-176.07	269.61	240.67	28.95	9.314		
4,100.00	4,087.51	4,086.40	4,054.99	14.93	15.83	-62.48	-440.40	-181.59	277.26	247.56	29.71	9.334		
4,200.00	4,187.11	4,186.11	4,153.72	15.32	16.25	-62.56	-453.15	-187.10	284.91	254.45	30.47	9.352		
4,300.00	4,286.71	4,285.81	4,252.45	15.70	16.66	-62.63	-465.90	-192.62	292.56	261.34	31.23	9.369		
4,400.00	4,386.32	4,385.52	4,351.19	16.08	17.07	-62.70	-478.66	-198.13	300.21	268.23	31.99	9.386		
4,500.00	4,485.92	4,485.23	4,449.92	16.46	17.49	-62.77	-491.41	-203.65	307.87	275.12	32.75	9.402		
4,600.00	4,585.52	4,584.93	4,548.65	16.84	17.90	-62.84	-504.17	-209.16	315.52	282.01	33.51	9.417		
4,700.00	4,685.12	4,684.64	4,647.39	17.23	18.32	-62.90	-516.92	-214.68	323.17	288.90	34.27	9.431		
4,759.45	4,744.33	4,743.91	4,706.08	17.45	18.56	-62.94	-524.50	-217.95	327.72	293.00	34.72	9.439		
4,800.00	4,784.74	4,784.33	4,746.11	17.61	18.73	-62.97	-529.67	-220.19	330.95	295.93	35.02	9.449		
4,900.00	4,884.57	4,883.88	4,844.69	17.98	19.14	-62.72	-542.40	-225.69	340.05	304.29	35.76	9.510		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3K-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.00	4,984.54	4,983.15	4,942.99	18.33	19.55	-62.00	-555.10	-231.18	350.78	314.33	36.46	9.622	
5,015.46	5,000.00	4,998.47	4,958.15	18.38	19.62	-171.52	-557.06	-232.03	352.60	316.04	36.56	9.644	
5,100.00	5,084.54	5,082.18	5,041.05	18.65	19.97	-172.50	-567.77	-236.66	362.68	325.56	37.12	9.771	
5,200.00	5,184.54	5,181.21	5,139.11	18.98	20.38	-173.60	-580.43	-242.14	374.74	336.96	37.78	9.918	
5,300.00	5,284.54	5,280.23	5,237.17	19.30	20.79	-174.62	-593.10	-247.62	386.92	348.48	38.45	10.063	
5,400.00	5,384.54	5,379.25	5,335.23	19.63	21.20	-175.58	-605.77	-253.09	399.22	360.10	39.12	10.205	
5,500.00	5,484.54	5,478.28	5,433.28	19.95	21.61	-176.48	-618.43	-258.57	411.63	371.84	39.79	10.345	
5,600.00	5,584.54	5,577.30	5,531.34	20.28	22.02	-177.33	-631.10	-264.05	424.13	383.66	40.47	10.481	
5,700.00	5,684.54	5,680.96	5,634.01	20.61	22.45	-178.16	-644.18	-269.70	436.56	395.38	41.18	10.601	
5,800.00	5,784.54	5,796.56	5,748.93	20.94	22.91	-178.84	-655.61	-274.64	446.34	404.38	41.96	10.638	
5,900.00	5,884.54	5,912.99	5,865.09	21.27	23.33	-179.26	-662.81	-277.76	452.49	409.80	42.68	10.602	
6,000.00	5,984.54	6,029.87	5,981.92	21.60	23.73	-179.42	-665.67	-278.99	454.92	411.58	43.34	10.497	
6,100.00	6,084.54	6,132.49	6,084.54	21.94	24.03	-179.42	-665.73	-279.02	454.97	410.98	43.99	10.343	
6,200.00	6,184.54	6,232.49	6,184.54	22.27	24.32	-179.42	-665.73	-279.02	454.97	410.33	44.64	10.192	
6,300.00	6,284.54	6,332.49	6,284.54	22.60	24.61	-179.42	-665.73	-279.02	454.97	409.67	45.30	10.044	
6,400.00	6,384.54	6,432.49	6,384.54	22.94	24.91	-179.42	-665.73	-279.02	454.97	409.02	45.95	9.901	
6,500.00	6,484.54	6,532.49	6,484.54	23.27	25.20	-179.42	-665.73	-279.02	454.97	408.36	46.61	9.761	
6,600.00	6,584.54	6,632.49	6,584.54	23.61	25.50	-179.42	-665.73	-279.02	454.97	407.70	47.27	9.624	
6,709.26	6,693.80	6,741.75	6,693.80	23.98	25.83	-179.42	-665.73	-279.02	454.97	406.97	48.00	9.479	
6,750.00	6,734.52	6,782.49	6,734.52	24.11	25.95	-179.42	-665.71	-277.86	454.97	406.71	48.26	9.427	
6,800.00	6,784.30	6,832.49	6,784.30	24.27	26.09	-179.42	-665.67	-273.28	454.97	406.40	48.57	9.367	
6,850.00	6,833.64	6,882.49	6,833.64	24.42	26.23	-179.42	-665.59	-265.23	454.97	406.10	48.87	9.310	
6,900.00	6,882.29	6,932.49	6,882.30	24.57	26.37	-179.42	-665.47	-253.77	454.97	405.81	49.16	9.255	
6,950.00	6,930.03	6,982.49	6,930.04	24.71	26.49	-179.42	-665.32	-238.94	454.97	405.53	49.44	9.203	
7,000.00	6,976.62	7,032.49	6,976.63	24.85	26.61	-179.42	-665.13	-220.81	454.97	405.26	49.71	9.152	
7,050.00	7,021.83	7,082.50	7,021.84	24.98	26.72	-179.42	-664.92	-199.48	454.97	404.98	49.99	9.102	
7,100.00	7,065.44	7,132.50	7,065.45	25.12	26.82	-179.42	-664.67	-175.05	454.97	404.70	50.27	9.051	
7,150.00	7,107.25	7,182.50	7,107.25	25.26	26.91	-179.42	-664.39	-147.63	454.97	404.40	50.57	8.996	
7,200.00	7,147.03	7,232.50	7,147.04	25.41	27.00	-179.42	-664.08	-117.37	454.97	404.06	50.91	8.937	
7,250.00	7,184.61	7,282.50	7,184.62	25.59	27.08	-179.42	-663.75	-84.40	454.97	403.68	51.29	8.871	
7,300.00	7,219.80	7,332.50	7,219.80	25.79	27.15	-179.42	-663.39	-48.90	454.97	403.24	51.73	8.795	
7,350.00	7,252.42	7,382.50	7,252.43	26.05	27.22	-179.42	-663.00	-11.02	454.97	402.71	52.26	8.707	
7,400.00	7,282.33	7,432.50	7,282.33	26.35	27.29	-179.42	-662.60	29.03	454.97	402.09	52.88	8.604	
7,450.00	7,309.37	7,482.50	7,309.37	26.72	27.38	-179.42	-662.17	71.08	454.97	401.36	53.61	8.486	
7,500.00	7,333.40	7,532.50	7,333.41	27.16	27.55	-179.42	-661.72	114.91	454.97	400.49	54.48	8.351	
7,550.00	7,354.32	7,582.50	7,354.33	27.66	27.90	-179.42	-661.26	160.31	454.97	399.49	55.48	8.200	
7,600.00	7,372.03	7,632.50	7,372.03	28.24	28.42	-179.42	-660.79	207.06	454.97	398.34	56.63	8.034	
7,650.00	7,386.43	7,682.50	7,386.43	28.90	29.03	-179.42	-660.30	254.93	454.97	397.05	57.92	7.855	
7,700.00	7,397.45	7,732.50	7,397.45	29.62	29.74	-179.42	-659.80	303.68	454.97	395.62	59.35	7.665	
7,750.00	7,405.05	7,782.50	7,405.05	30.41	30.51	-179.42	-659.30	353.09	454.97	394.06	60.92	7.469	
7,800.00	7,409.18	7,832.50	7,409.18	31.26	31.34	-179.42	-658.80	402.91	454.97	392.38	62.59	7.269	
7,834.26	7,410.00	7,866.76	7,410.00	31.86	31.93	-179.42	-658.45	437.15	454.97	391.18	63.79	7.132	
7,900.00	7,410.00	7,932.50	7,410.00	33.09	33.17	-179.42	-657.78	502.89	454.97	388.71	66.26	6.866	
8,000.00	7,410.00	8,032.50	7,410.00	35.13	35.19	-179.42	-656.76	602.88	454.97	384.67	70.30	6.472	
8,100.00	7,410.00	8,132.50	7,410.00	37.32	37.37	-179.42	-655.75	702.88	454.97	380.29	74.68	6.093	
8,200.00	7,410.00	8,232.50	7,410.00	39.66	39.69	-179.42	-654.73	802.87	454.97	375.64	79.33	5.735	
8,300.00	7,410.00	8,332.50	7,410.00	42.11	42.13	-179.42	-653.71	902.87	454.97	370.76	84.21	5.403	
8,400.00	7,410.00	8,432.50	7,410.00	44.66	44.66	-179.42	-652.70	1,002.86	454.97	365.68	89.29	5.095	
8,500.00	7,410.00	8,532.50	7,410.00	47.29	47.27	-179.42	-651.68	1,102.86	454.97	360.44	94.53	4.813	
8,600.00	7,410.00	8,632.50	7,410.00	49.98	49.96	-179.42	-650.67	1,202.85	454.97	355.06	99.91	4.554	
8,700.00	7,410.00	8,732.50	7,410.00	52.73	52.70	-179.42	-649.65	1,302.85	454.97	349.57	105.40	4.317	
8,800.00	7,410.00	8,832.50	7,410.00	55.53	55.49	-179.42	-648.63	1,402.84	454.97	343.98	110.99	4.099	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3K-25H-M166 - OH - PLAN #1												Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
8,900.00	7,410.00	8,932.50	7,410.00	58.37	58.32	90.00	-647.62	1,502.84	454.97	338.30	116.67	3.900	
9,000.00	7,410.00	9,032.50	7,410.00	61.25	61.20	90.00	-646.60	1,602.83	454.97	332.55	122.42	3.717	
9,100.00	7,410.00	9,132.50	7,410.00	64.16	64.10	90.00	-645.58	1,702.83	454.97	326.74	128.23	3.548	
9,200.00	7,410.00	9,232.50	7,410.00	67.10	67.03	90.00	-644.57	1,802.82	454.97	320.88	134.10	3.393	
9,300.00	7,410.00	9,332.50	7,410.00	70.06	69.98	90.00	-643.55	1,902.82	454.97	314.96	140.01	3.250	
9,400.00	7,410.00	9,432.50	7,410.00	73.04	72.96	90.00	-642.54	2,002.81	454.97	309.00	145.97	3.117	
9,500.00	7,410.00	9,532.50	7,410.00	76.04	75.95	90.00	-641.52	2,102.81	454.97	303.01	151.96	2.994	
9,600.00	7,410.00	9,632.50	7,410.00	79.06	78.96	90.00	-640.50	2,202.80	454.97	296.98	157.99	2.880	
9,700.00	7,410.00	9,732.50	7,410.00	82.09	81.99	90.00	-639.49	2,302.80	454.97	290.93	164.05	2.773	
9,800.00	7,410.00	9,832.50	7,410.00	85.13	85.03	90.00	-638.47	2,402.79	454.97	284.84	170.13	2.674	
9,900.00	7,410.00	9,932.50	7,410.00	88.18	88.08	90.00	-637.45	2,502.79	454.97	278.74	176.23	2.582	
10,000.00	7,410.00	10,032.50	7,410.00	91.25	91.14	90.00	-636.44	2,602.78	454.97	272.61	182.36	2.495	
10,100.00	7,410.00	10,132.50	7,410.00	94.32	94.21	90.00	-635.42	2,702.78	454.97	266.47	188.51	2.414	
10,200.00	7,410.00	10,232.50	7,410.00	97.40	97.29	90.00	-634.41	2,802.77	454.97	260.30	194.67	2.337	
10,300.00	7,410.00	10,332.50	7,410.00	100.50	100.38	90.00	-633.39	2,902.76	454.97	254.12	200.85	2.265	
10,400.00	7,410.00	10,432.50	7,410.00	103.59	103.47	90.00	-632.37	3,002.76	454.97	247.93	207.04	2.197	
10,500.00	7,410.00	10,532.50	7,410.00	106.70	106.58	90.00	-631.36	3,102.75	454.97	241.73	213.25	2.134	
10,600.00	7,410.00	10,632.50	7,410.00	109.81	109.68	90.00	-630.34	3,202.75	454.97	235.51	219.47	2.073	
10,700.00	7,410.00	10,732.50	7,410.00	112.92	112.80	90.00	-629.32	3,302.74	454.97	229.28	225.70	2.016	
10,800.00	7,410.00	10,832.50	7,410.00	116.04	115.91	90.00	-628.31	3,402.74	454.97	223.04	231.93	1.962	
10,900.00	7,410.00	10,932.50	7,410.00	119.17	119.04	90.00	-627.29	3,502.73	454.97	216.79	238.18	1.910	
11,000.00	7,410.00	11,032.50	7,410.00	122.30	122.16	90.00	-626.28	3,602.73	454.97	210.54	244.44	1.861	
11,100.00	7,410.00	11,132.50	7,410.00	125.43	125.30	90.00	-625.26	3,702.72	454.98	204.27	250.70	1.815	
11,200.00	7,410.00	11,232.50	7,410.00	128.57	128.43	90.00	-624.24	3,802.72	454.98	198.00	256.98	1.770	
11,300.00	7,410.00	11,332.50	7,410.00	131.71	131.57	90.00	-623.23	3,902.71	454.98	191.72	263.25	1.728	
11,400.00	7,410.00	11,432.50	7,410.00	134.85	134.71	90.00	-622.21	4,002.71	454.98	185.44	269.54	1.688	
11,500.00	7,410.00	11,532.50	7,410.00	138.00	137.86	90.00	-621.19	4,102.70	454.98	179.15	275.83	1.649	
11,600.00	7,410.00	11,632.50	7,410.00	141.14	141.00	90.00	-620.18	4,202.70	454.98	172.85	282.13	1.613	
11,700.00	7,410.00	11,732.50	7,410.00	144.30	144.15	90.00	-619.16	4,302.69	454.98	166.55	288.43	1.577	
11,800.00	7,410.00	11,832.50	7,410.00	147.45	147.30	90.00	-618.15	4,402.69	454.98	160.24	294.73	1.544	
11,811.02	7,410.00	11,843.52	7,410.00	147.80	147.65	90.00	-618.03	4,413.71	454.98	159.55	295.43	1.540	
11,906.34	7,410.00	11,936.55	7,410.00	150.80	150.10	90.00	-617.09	4,506.73	454.98	154.09	300.89	1.512 SF	



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	-179.96	-29.87	-0.02	29.87					
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-29.87	-0.02	29.87	29.60	0.28	108.222		
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-29.87	-0.02	29.87	28.88	0.99	30.083		
300.00	300.00	300.00	300.00	0.85	0.85	-179.96	-29.87	-0.02	29.87	28.16	1.71	17.470		
400.00	400.00	400.00	400.00	1.21	1.21	-179.96	-29.87	-0.02	29.87	27.44	2.43	12.309		
500.00	500.00	500.00	500.00	1.57	1.57	-179.96	-29.87	-0.02	29.87	26.73	3.14	9.502 CC, ES		
600.00	600.00	598.98	598.96	1.93	1.91	-178.98	-31.49	-0.56	31.52	27.66	3.86	8.174		
700.00	700.00	697.72	697.57	2.29	2.24	-176.58	-36.35	-2.17	36.49	31.92	4.58	7.975		
800.00	800.00	796.00	795.47	2.65	2.58	-173.79	-44.37	-4.83	44.86	39.56	5.31	8.455		
900.00	899.98	893.76	892.52	2.99	2.93	-45.75	-55.52	-8.53	55.44	49.42	6.02	9.206		
1,000.00	999.84	991.76	989.38	3.33	3.30	-46.36	-69.67	-13.22	66.77	60.06	6.71	9.949		
1,056.01	1,055.67	1,047.45	1,044.35	3.52	3.52	-47.41	-78.12	-16.03	72.52	65.43	7.09	10.234		
1,100.00	1,099.48	1,091.22	1,087.56	3.67	3.69	-48.43	-84.77	-18.23	76.77	69.38	7.39	10.394		
1,200.00	1,199.08	1,190.71	1,185.77	4.03	4.09	-50.37	-99.87	-23.24	86.50	78.42	8.08	10.705		
1,300.00	1,298.69	1,290.20	1,283.97	4.38	4.49	-51.91	-114.96	-28.24	96.30	87.52	8.78	10.962		
1,400.00	1,398.29	1,389.68	1,382.18	4.74	4.90	-53.17	-130.06	-33.25	106.16	96.67	9.50	11.177		
1,500.00	1,497.89	1,489.17	1,480.39	5.11	5.31	-54.21	-145.16	-38.26	116.07	105.85	10.22	11.357		
1,600.00	1,597.49	1,588.66	1,578.60	5.48	5.72	-55.09	-160.26	-43.27	126.01	115.06	10.95	11.510		
1,700.00	1,697.09	1,688.15	1,676.81	5.85	6.14	-55.85	-175.36	-48.28	135.97	124.29	11.68	11.642		
1,800.00	1,796.69	1,787.64	1,775.01	6.22	6.56	-56.49	-190.46	-53.28	145.95	133.53	12.42	11.755		
1,900.00	1,896.29	1,887.12	1,873.22	6.59	6.98	-57.06	-205.56	-58.29	155.95	142.79	13.16	11.855		
2,000.00	1,995.89	1,986.61	1,971.43	6.96	7.40	-57.56	-220.66	-63.30	165.96	152.06	13.90	11.942		
2,100.00	2,095.49	2,086.10	2,069.64	7.34	7.82	-58.00	-235.76	-68.31	175.98	161.34	14.64	12.019		
2,200.00	2,195.09	2,185.59	2,167.84	7.71	8.24	-58.39	-250.86	-73.32	186.01	170.62	15.39	12.087		
2,300.00	2,294.70	2,285.08	2,266.05	8.09	8.66	-58.74	-265.96	-78.32	196.05	179.92	16.14	12.148		
2,400.00	2,394.30	2,384.56	2,364.26	8.47	9.09	-59.06	-281.06	-83.33	206.10	189.21	16.89	12.204		
2,500.00	2,493.90	2,484.05	2,462.47	8.85	9.51	-59.35	-296.16	-88.34	216.15	198.51	17.64	12.253		
2,600.00	2,593.50	2,583.54	2,560.68	9.22	9.94	-59.61	-311.26	-93.35	226.21	207.82	18.39	12.299		
2,700.00	2,693.10	2,683.03	2,658.88	9.60	10.36	-59.85	-326.36	-98.36	236.27	217.12	19.15	12.340		
2,800.00	2,792.70	2,782.52	2,757.09	9.98	10.79	-60.08	-341.46	-103.36	246.33	226.43	19.90	12.377		
2,900.00	2,892.30	2,882.00	2,855.30	10.36	11.22	-60.28	-356.56	-108.37	256.40	235.74	20.66	12.412		
3,000.00	2,991.90	2,981.49	2,953.51	10.74	11.64	-60.47	-371.66	-113.38	266.47	245.06	21.41	12.444		
3,100.00	3,091.50	3,080.98	3,051.71	11.12	12.07	-60.64	-386.76	-118.39	276.55	254.38	22.17	12.473		
3,200.00	3,191.10	3,180.47	3,149.92	11.50	12.50	-60.80	-401.85	-123.40	286.62	263.69	22.93	12.500		
3,300.00	3,290.71	3,279.95	3,248.13	11.88	12.92	-60.96	-416.95	-128.40	296.70	273.01	23.69	12.526		
3,400.00	3,390.31	3,379.44	3,346.34	12.26	13.35	-61.10	-432.05	-133.41	306.78	282.34	24.45	12.549		
3,500.00	3,489.91	3,478.93	3,444.55	12.64	13.78	-61.23	-447.15	-138.42	316.86	291.66	25.21	12.571		
3,600.00	3,589.51	3,578.42	3,542.75	13.03	14.21	-61.35	-462.25	-143.43	326.95	300.98	25.97	12.592		
3,700.00	3,689.11	3,677.91	3,640.96	13.41	14.64	-61.47	-477.35	-148.43	337.03	310.31	26.73	12.611		
3,800.00	3,788.71	3,777.39	3,739.17	13.79	15.06	-61.58	-492.45	-153.44	347.12	319.63	27.49	12.629		
3,900.00	3,888.31	3,876.88	3,837.38	14.17	15.49	-61.69	-507.55	-158.45	357.21	328.96	28.25	12.646		
4,000.00	3,987.91	3,976.37	3,935.58	14.55	15.92	-61.78	-522.65	-163.46	367.30	338.29	29.01	12.662		
4,100.00	4,087.51	4,075.86	4,033.79	14.93	16.35	-61.88	-537.75	-168.47	377.39	347.62	29.77	12.677		
4,200.00	4,187.11	4,175.35	4,132.00	15.32	16.78	-61.96	-552.85	-173.47	387.48	356.94	30.53	12.691		
4,300.00	4,286.71	4,274.83	4,230.21	15.70	17.21	-62.05	-567.95	-178.48	397.57	366.27	31.29	12.705		
4,400.00	4,386.32	4,374.32	4,328.41	16.08	17.64	-62.13	-583.05	-183.49	407.66	375.60	32.06	12.717		
4,500.00	4,485.92	4,473.81	4,426.62	16.46	18.06	-62.20	-598.15	-188.50	417.75	384.93	32.82	12.730		
4,600.00	4,585.52	4,573.30	4,524.83	16.84	18.49	-62.27	-613.25	-193.51	427.85	394.27	33.58	12.741		
4,700.00	4,685.12	4,672.79	4,623.04	17.23	18.92	-62.34	-628.35	-198.51	437.94	403.60	34.34	12.752		
4,759.45	4,744.33	4,731.93	4,681.42	17.45	19.18	-62.38	-637.32	-201.49	443.94	409.15	34.80	12.758		
4,800.00	4,784.74	4,772.26	4,721.23	17.61	19.35	-62.45	-643.44	-203.52	448.17	413.06	35.10	12.767		
4,900.00	4,884.57	4,871.56	4,819.25	17.98	19.78	-62.37	-658.52	-208.52	459.72	423.88	35.84	12.827		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.00	4,984.54	4,970.54	4,916.96	18.33	20.21	-61.96	-673.54	-213.50	472.91	436.37	36.55	12.940	
5,015.46	5,000.00	4,985.81	4,932.03	18.38	20.27	171.52	-675.85	-214.27	475.11	438.45	36.65	12.963	
5,100.00	5,084.54	5,069.26	5,014.41	18.65	20.63	172.23	-688.52	-218.47	487.24	450.02	37.22	13.092	
5,200.00	5,184.54	5,167.97	5,111.85	18.98	21.06	173.04	-703.50	-223.44	501.68	463.79	37.89	13.241	
5,300.00	5,284.54	5,266.69	5,209.30	19.30	21.48	173.79	-718.48	-228.41	516.21	477.65	38.56	13.386	
5,400.00	5,384.54	5,365.40	5,306.74	19.63	21.91	174.51	-733.47	-233.38	530.83	491.59	39.24	13.528	
5,500.00	5,484.54	5,464.11	5,404.18	19.95	22.34	175.19	-748.45	-238.35	545.52	505.60	39.92	13.666	
5,600.00	5,584.54	5,562.83	5,501.63	20.28	22.76	175.83	-763.43	-243.32	560.29	519.69	40.60	13.800	
5,700.00	5,684.54	5,661.54	5,599.07	20.61	23.19	176.44	-778.41	-248.29	575.12	533.83	41.28	13.931	
5,800.00	5,784.54	5,760.25	5,696.51	20.94	23.61	177.02	-793.39	-253.25	590.01	548.04	41.97	14.059	
5,900.00	5,884.54	5,858.97	5,793.96	21.27	24.04	177.57	-808.38	-258.22	604.96	562.30	42.65	14.183	
6,000.00	5,984.54	5,957.68	5,891.40	21.60	24.47	178.09	-823.36	-263.19	619.96	576.61	43.34	14.304	
6,100.00	6,084.54	6,068.94	6,001.32	21.94	24.94	178.63	-839.65	-268.60	634.53	590.41	44.13	14.380	
6,200.00	6,184.54	6,164.78	6,126.28	22.27	25.45	179.07	-853.67	-273.25	645.61	600.65	44.96	14.359	
6,300.00	6,284.54	6,321.69	6,252.84	22.60	25.91	179.35	-862.52	-276.18	652.55	606.84	45.72	14.273	
6,400.00	6,384.54	6,449.18	6,380.27	22.94	26.32	179.45	-866.05	-277.35	655.31	608.93	46.38	14.128	
6,500.00	6,484.54	6,553.45	6,484.54	23.27	26.62	179.45	-866.11	-277.37	655.36	608.33	47.03	13.936	
6,600.00	6,584.54	6,653.45	6,584.54	23.61	26.90	179.45	-866.11	-277.37	655.36	607.68	47.68	13.745	
6,664.79	6,649.34	6,718.25	6,649.34	23.83	27.08	179.41	-866.11	-276.92	655.36	607.26	48.10	13.624	
6,709.26	6,693.80	6,762.54	6,693.51	23.98	27.20	179.16	-866.08	-273.97	655.37	606.97	48.40	13.540	
6,750.00	6,734.52	6,802.81	6,733.46	24.11	27.31	89.39	-866.03	-268.93	655.40	606.73	48.67	13.466	
6,800.00	6,784.30	6,851.94	6,781.72	24.27	27.44	88.98	-865.93	-259.75	655.47	606.48	48.99	13.379	
6,850.00	6,833.64	6,900.75	6,828.93	24.42	27.56	88.56	-865.80	-247.37	655.57	606.27	49.30	13.298	
6,900.00	6,882.29	6,949.26	6,874.90	24.57	27.67	88.16	-865.65	-231.91	655.70	606.10	49.60	13.221	
6,950.00	6,930.03	6,997.49	6,919.46	24.71	27.77	87.77	-865.46	-213.50	655.86	605.97	49.89	13.147	
7,000.00	6,976.62	7,045.43	6,962.43	24.85	27.87	87.38	-865.24	-192.27	656.04	605.87	50.17	13.076	
7,050.00	7,021.83	7,093.11	7,003.66	24.98	27.96	87.01	-864.99	-168.34	656.25	605.79	50.46	13.005	
7,100.00	7,065.44	7,140.54	7,043.01	25.12	28.04	86.66	-864.72	-141.87	656.47	605.72	50.76	12.933	
7,150.00	7,107.25	7,187.73	7,080.34	25.26	28.11	86.32	-864.43	-113.01	656.71	605.63	51.08	12.858	
7,200.00	7,147.03	7,234.71	7,115.52	25.41	28.17	86.00	-864.11	-81.91	656.95	605.53	51.43	12.775	
7,250.00	7,184.61	7,281.48	7,148.45	25.59	28.23	85.70	-863.77	-48.71	657.20	605.38	51.82	12.682	
7,300.00	7,219.80	7,328.05	7,179.03	25.79	28.28	85.42	-863.41	-13.58	657.45	605.17	52.28	12.576	
7,350.00	7,252.42	7,374.46	7,207.16	26.05	28.32	85.16	-863.03	23.31	657.69	604.88	52.81	12.454	
7,400.00	7,282.33	7,420.71	7,232.75	26.35	28.35	84.92	-862.64	61.82	657.92	604.49	53.44	12.312	
7,450.00	7,309.37	7,466.81	7,255.74	26.72	28.39	84.71	-862.23	101.77	658.14	603.98	54.17	12.150	
7,500.00	7,333.40	7,512.79	7,276.06	27.16	28.42	84.51	-861.80	143.01	658.35	603.33	55.02	11.967	
7,550.00	7,354.32	7,558.66	7,293.66	27.66	28.46	84.35	-861.37	185.36	658.53	602.54	55.99	11.762	
7,600.00	7,372.03	7,604.43	7,308.48	28.24	28.73	84.21	-860.93	228.66	658.68	601.59	57.09	11.537	
7,650.00	7,386.43	7,650.00	7,320.45	28.90	29.30	84.09	-860.48	272.61	658.81	600.48	58.33	11.295	
7,700.00	7,397.45	7,695.77	7,329.64	29.62	29.96	84.01	-860.02	317.43	658.91	599.21	59.70	11.037	
7,750.00	7,405.05	7,741.36	7,335.93	30.41	30.68	83.94	-859.55	362.58	658.98	597.80	61.19	10.770	
7,800.00	7,409.18	7,786.92	7,339.34	31.26	31.44	83.91	-859.09	408.00	659.02	596.24	62.78	10.497	
7,834.26	7,410.00	7,818.17	7,340.00	31.86	31.99	83.90	-858.77	439.25	659.03	595.11	63.92	10.310	
7,900.00	7,410.00	7,883.91	7,340.00	33.09	33.22	83.90	-858.09	504.98	659.02	592.66	66.36	9.931	
8,000.00	7,410.00	7,983.91	7,340.00	35.13	35.24	83.90	-857.07	604.98	659.02	588.65	70.37	9.365	
8,100.00	7,410.00	8,083.91	7,340.00	37.32	37.41	83.90	-856.04	704.97	659.01	584.30	74.71	8.821	
8,200.00	7,410.00	8,183.91	7,340.00	39.66	39.73	83.90	-855.02	804.96	659.00	579.68	79.32	8.308	
8,300.00	7,410.00	8,283.91	7,340.00	42.11	42.16	83.90	-854.00	904.96	658.99	574.82	84.17	7.830	
8,400.00	7,410.00	8,383.91	7,340.00	44.66	44.69	83.90	-852.97	1,004.95	658.98	569.78	89.21	7.387	
8,500.00	7,410.00	8,483.91	7,340.00	47.29	47.30	83.90	-851.95	1,104.95	658.97	564.57	94.41	6.980	
8,600.00	7,410.00	8,583.91	7,340.00	49.98	49.98	83.90	-850.92	1,204.94	658.97	559.22	99.74	6.607	
8,700.00	7,410.00	8,683.91	7,340.00	52.73	52.72	83.90	-849.90	1,304.94	658.96	553.76	105.20	6.264	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3L-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
8,800.00	7,410.00	8,783.91	7,340.00	55.53	55.51	83.90	-848.87	1,404.93	658.95	548.20	110.75	5.950	
8,900.00	7,410.00	8,883.91	7,340.00	58.37	58.34	83.90	-847.85	1,504.93	658.94	542.56	116.38	5.662	
9,000.00	7,410.00	8,983.91	7,340.00	61.25	61.21	83.90	-846.82	1,604.92	658.93	536.84	122.09	5.397	
9,100.00	7,410.00	9,083.91	7,340.00	64.16	64.11	83.90	-845.80	1,704.92	658.92	531.06	127.87	5.153	
9,200.00	7,410.00	9,183.91	7,340.00	67.10	67.04	83.90	-844.77	1,804.91	658.92	525.22	133.69	4.929	
9,300.00	7,410.00	9,283.91	7,340.00	70.06	69.99	83.90	-843.75	1,904.91	658.91	519.34	139.57	4.721	
9,400.00	7,410.00	9,383.91	7,340.00	73.04	72.96	83.90	-842.72	2,004.90	658.90	513.41	145.49	4.529	
9,500.00	7,410.00	9,483.91	7,340.00	76.04	75.96	83.90	-841.70	2,104.90	658.89	507.45	151.44	4.351	
9,600.00	7,410.00	9,583.91	7,340.00	79.06	78.96	83.90	-840.67	2,204.89	658.88	501.45	157.43	4.185	
9,700.00	7,410.00	9,683.91	7,340.00	82.09	81.99	83.90	-839.65	2,304.89	658.87	495.43	163.45	4.031	
9,800.00	7,410.00	9,783.91	7,340.00	85.13	85.03	83.90	-838.62	2,404.88	658.87	489.37	169.49	3.887	
9,900.00	7,410.00	9,883.91	7,340.00	88.18	88.07	83.90	-837.60	2,504.88	658.86	483.30	175.56	3.753	
10,000.00	7,410.00	9,983.91	7,340.00	91.25	91.13	83.90	-836.57	2,604.87	658.85	477.20	181.65	3.627	
10,100.00	7,410.00	10,083.91	7,340.00	94.32	94.20	83.90	-835.55	2,704.86	658.84	471.08	187.76	3.509	
10,200.00	7,410.00	10,183.91	7,340.00	97.40	97.28	83.90	-834.52	2,804.86	658.83	464.95	193.88	3.398	
10,300.00	7,410.00	10,283.91	7,340.00	100.50	100.37	83.90	-833.50	2,904.85	658.82	458.80	200.03	3.294	
10,400.00	7,410.00	10,383.91	7,340.00	103.59	103.46	83.90	-832.47	3,004.85	658.82	452.63	206.18	3.195	
10,500.00	7,410.00	10,483.91	7,340.00	106.70	106.56	83.90	-831.45	3,104.84	658.81	446.46	212.35	3.102	
10,600.00	7,410.00	10,583.91	7,340.00	109.81	109.67	83.90	-830.43	3,204.84	658.80	440.27	218.53	3.015	
10,700.00	7,410.00	10,683.91	7,340.00	112.92	112.78	83.90	-829.40	3,304.83	658.79	434.07	224.72	2.932	
10,800.00	7,410.00	10,783.91	7,340.00	116.04	115.90	83.90	-828.38	3,404.83	658.78	427.86	230.92	2.853	
10,900.00	7,410.00	10,883.91	7,340.00	119.17	119.02	83.90	-827.35	3,504.82	658.77	421.64	237.14	2.778	
11,000.00	7,410.00	10,983.91	7,340.00	122.30	122.15	83.90	-826.33	3,604.82	658.77	415.41	243.36	2.707	
11,100.00	7,410.00	11,083.91	7,340.00	125.43	125.28	83.90	-825.30	3,704.81	658.76	409.17	249.58	2.639	
11,200.00	7,410.00	11,183.91	7,340.00	128.57	128.41	83.90	-824.28	3,804.81	658.75	402.93	255.82	2.575	
11,300.00	7,410.00	11,283.91	7,340.00	131.71	131.55	83.90	-823.25	3,904.80	658.74	396.68	262.06	2.514	
11,400.00	7,410.00	11,383.91	7,340.00	134.85	134.69	83.90	-822.23	4,004.80	658.73	390.42	268.31	2.455	
11,500.00	7,410.00	11,483.91	7,340.00	138.00	137.83	83.90	-821.20	4,104.79	658.72	384.16	274.56	2.399	
11,600.00	7,410.00	11,583.91	7,340.00	141.14	140.98	83.90	-820.18	4,204.79	658.72	377.89	280.82	2.346	
11,700.00	7,410.00	11,683.91	7,340.00	144.30	144.13	83.90	-819.15	4,304.78	658.71	371.62	287.09	2.294	
11,800.00	7,410.00	11,783.91	7,340.00	147.45	147.28	83.90	-818.13	4,404.78	658.70	365.34	293.36	2.245	
11,902.66	7,410.00	11,886.52	7,340.00	150.69	150.52	83.90	-817.08	4,507.38	658.69	358.89	299.80	2.197	
11,906.34	7,410.00	11,886.52	7,340.00	150.80	150.52	83.90	-817.08	4,507.38	658.70	358.77	299.93	2.196 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	179.91	-40.06	0.07	40.06					
100.00	100.00	100.00	100.00	0.14	0.14	179.91	-40.06	0.07	40.06	39.79	0.28	145.143		
200.00	200.00	200.00	200.00	0.50	0.50	179.91	-40.06	0.07	40.06	39.07	0.99	40.347		
300.00	300.00	300.00	300.00	0.85	0.85	179.91	-40.06	0.07	40.06	38.35	1.71	23.430		
400.00	400.00	400.00	400.00	1.21	1.21	179.91	-40.06	0.07	40.06	37.64	2.43	16.508	CC, ES	
500.00	500.00	498.64	498.62	1.57	1.55	-179.45	-41.69	-0.40	41.72	38.58	3.14	13.273		
600.00	600.00	597.04	596.88	1.93	1.89	-177.78	-46.57	-1.81	46.71	42.84	3.87	12.060		
700.00	700.00	694.98	694.46	2.29	2.23	-175.68	-54.64	-4.13	55.08	50.46	4.62	11.934		
800.00	800.00	792.23	791.00	2.65	2.58	-173.63	-65.82	-7.35	66.84	61.48	5.36	12.475		
900.00	899.98	889.39	887.03	2.99	2.95	-45.92	-80.05	-11.45	80.69	74.63	6.07	13.301		
1,000.00	999.84	988.60	984.93	3.33	3.35	-46.55	-95.53	-15.90	93.15	86.42	6.73	13.848		
1,056.01	1,055.67	1,044.27	1,039.85	3.52	3.57	-47.47	-104.21	-18.40	99.10	91.99	7.10	13.949		
1,100.00	1,099.48	1,088.01	1,083.01	3.67	3.75	-48.36	-111.03	-20.37	103.51	96.10	7.41	13.975		
1,200.00	1,199.08	1,187.44	1,181.13	4.03	4.16	-50.13	-126.54	-24.84	113.61	105.51	8.10	14.020		
1,300.00	1,298.69	1,286.87	1,279.24	4.38	4.57	-51.61	-142.05	-29.30	123.81	115.00	8.81	14.051		
1,400.00	1,398.29	1,386.31	1,377.35	4.74	4.99	-52.87	-157.56	-33.77	134.08	124.55	9.53	14.072		
1,500.00	1,497.89	1,485.74	1,475.47	5.11	5.40	-53.94	-173.07	-38.23	144.40	134.14	10.25	14.086		
1,600.00	1,597.49	1,585.17	1,573.58	5.48	5.83	-54.87	-188.58	-42.70	154.76	143.78	10.98	14.095		
1,700.00	1,697.09	1,684.60	1,671.69	5.85	6.25	-55.69	-204.09	-47.17	165.16	153.45	11.71	14.100		
1,800.00	1,796.69	1,784.04	1,769.81	6.22	6.67	-56.41	-219.60	-51.63	175.59	163.14	12.45	14.103		
1,900.00	1,896.29	1,883.47	1,867.92	6.59	7.10	-57.04	-235.11	-56.10	186.04	172.85	13.19	14.103		
2,000.00	1,995.89	1,982.90	1,966.04	6.96	7.52	-57.61	-250.62	-60.56	196.51	182.58	13.93	14.102		
2,100.00	2,095.49	2,082.33	2,064.15	7.34	7.95	-58.13	-266.13	-65.03	207.00	192.32	14.68	14.100		
2,200.00	2,195.09	2,181.76	2,162.26	7.71	8.37	-58.59	-281.64	-69.49	217.51	202.08	15.43	14.098		
2,300.00	2,294.70	2,281.20	2,260.38	8.09	8.80	-59.01	-297.15	-73.96	228.02	211.84	16.18	14.094		
2,400.00	2,394.30	2,380.63	2,358.49	8.47	9.23	-59.39	-312.66	-78.43	238.55	221.62	16.93	14.091		
2,500.00	2,493.90	2,480.06	2,456.60	8.85	9.66	-59.74	-328.17	-82.89	249.09	231.41	17.68	14.087		
2,600.00	2,593.50	2,579.49	2,554.72	9.22	10.09	-60.06	-343.68	-87.36	259.64	241.20	18.44	14.083		
2,700.00	2,693.10	2,678.92	2,652.83	9.60	10.51	-60.36	-359.19	-91.82	270.19	251.00	19.19	14.079		
2,800.00	2,792.70	2,778.36	2,750.94	9.98	10.94	-60.63	-374.70	-96.29	280.75	260.80	19.95	14.075		
2,900.00	2,892.30	2,877.79	2,849.06	10.36	11.37	-60.89	-390.21	-100.76	291.32	270.61	20.70	14.070		
3,000.00	2,991.90	2,977.22	2,947.17	10.74	11.80	-61.13	-405.72	-105.22	301.89	280.43	21.46	14.066		
3,100.00	3,091.50	3,076.65	3,045.28	11.12	12.23	-61.35	-421.23	-109.69	312.47	290.25	22.22	14.062		
3,200.00	3,191.10	3,176.09	3,143.40	11.50	12.66	-61.55	-436.74	-114.15	323.05	300.07	22.98	14.058		
3,300.00	3,290.71	3,275.52	3,241.51	11.88	13.09	-61.75	-452.25	-118.62	333.63	309.89	23.74	14.055		
3,400.00	3,390.31	3,374.95	3,339.62	12.26	13.52	-61.93	-467.76	-123.09	344.22	319.72	24.50	14.051		
3,500.00	3,489.91	3,474.38	3,437.74	12.64	13.95	-62.10	-483.26	-127.55	354.81	329.55	25.26	14.047		
3,600.00	3,589.51	3,573.81	3,535.85	13.03	14.38	-62.26	-498.77	-132.02	365.41	339.39	26.02	14.043		
3,700.00	3,689.11	3,673.25	3,633.96	13.41	14.81	-62.41	-514.28	-136.48	376.00	349.22	26.78	14.040		
3,800.00	3,788.71	3,772.68	3,732.08	13.79	15.24	-62.55	-529.79	-140.95	386.60	359.06	27.54	14.037		
3,900.00	3,888.31	3,872.11	3,830.19	14.17	15.67	-62.69	-545.30	-145.42	397.20	368.90	28.30	14.033		
4,000.00	3,987.91	3,971.54	3,928.30	14.55	16.10	-62.82	-560.81	-149.88	407.81	378.74	29.07	14.030		
4,100.00	4,087.51	4,070.97	4,026.42	14.93	16.53	-62.94	-576.32	-154.35	418.41	388.59	29.83	14.027		
4,200.00	4,187.11	4,170.41	4,124.53	15.32	16.97	-63.06	-591.83	-158.81	429.02	398.43	30.59	14.024		
4,300.00	4,286.71	4,269.84	4,222.65	15.70	17.40	-63.17	-607.34	-163.28	439.63	408.28	31.36	14.021		
4,400.00	4,386.32	4,369.27	4,320.76	16.08	17.83	-63.27	-622.85	-167.75	450.24	418.12	32.12	14.018		
4,500.00	4,485.92	4,468.70	4,418.87	16.46	18.26	-63.37	-638.36	-172.21	460.85	427.97	32.88	14.015		
4,600.00	4,585.52	4,568.14	4,516.99	16.84	18.69	-63.47	-653.87	-176.68	471.47	437.82	33.65	14.013		
4,700.00	4,685.12	4,667.57	4,615.10	17.23	19.12	-63.56	-669.38	-181.14	482.08	447.67	34.41	14.010		
4,759.45	4,744.33	4,726.68	4,673.43	17.45	19.38	-63.61	-678.60	-183.80	488.39	453.53	34.86	14.009		
4,800.00	4,784.74	4,766.99	4,713.20	17.61	19.55	-63.70	-684.89	-185.61	492.83	457.65	35.17	14.012		
4,900.00	4,884.57	4,866.24	4,811.13	17.98	19.98	-63.68	-700.37	-190.07	504.84	468.93	35.91	14.059		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft			
Survey Program: 0-MWD+HDGM															Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning			
5,000.00	4,984.54	4,965.17	4,908.76	18.33	20.41	-63.35	-715.80	-194.51	518.41	481.79	36.62	14.157				
5,015.46	5,000.00	4,980.43	4,923.82	18.38	20.48	170.11	-718.18	-195.19	520.66	483.93	36.72	14.177				
5,100.00	5,084.54	5,063.85	5,006.13	18.65	20.84	170.76	-731.19	-198.94	533.06	495.77	37.29	14.294				
5,200.00	5,184.54	5,162.53	5,103.49	18.98	21.27	171.48	-746.59	-203.37	547.81	509.84	37.97	14.429				
5,300.00	5,284.54	5,261.20	5,200.86	19.30	21.70	172.17	-761.98	-207.81	562.65	524.00	38.64	14.560				
5,400.00	5,384.54	5,359.87	5,298.23	19.63	22.12	172.82	-777.37	-212.24	577.55	538.23	39.32	14.688				
5,500.00	5,484.54	5,458.55	5,395.59	19.95	22.55	173.44	-792.76	-216.67	592.53	552.53	40.00	14.812				
5,600.00	5,584.54	5,557.22	5,492.96	20.28	22.98	174.02	-808.15	-221.10	607.58	566.89	40.68	14.934				
5,700.00	5,684.54	5,655.90	5,590.32	20.61	23.41	174.58	-823.54	-225.53	622.68	581.31	41.37	15.052				
5,800.00	5,784.54	5,754.57	5,687.69	20.94	23.84	175.12	-838.93	-229.96	637.84	595.78	42.06	15.167				
5,900.00	5,884.54	5,853.24	5,785.05	21.27	24.26	175.63	-854.33	-234.40	653.05	610.31	42.74	15.279				
6,000.00	5,984.54	5,951.92	5,882.42	21.60	24.69	176.11	-869.72	-238.83	668.31	624.87	43.43	15.387				
6,100.00	6,084.54	6,050.59	5,979.78	21.94	25.12	176.57	-885.11	-243.26	683.61	639.49	44.12	15.493				
6,200.00	6,184.54	6,149.26	6,077.15	22.27	25.55	177.02	-900.50	-247.69	698.95	654.14	44.81	15.597				
6,300.00	6,284.54	6,247.94	6,174.51	22.60	25.98	177.44	-915.89	-252.12	714.34	668.83	45.51	15.697				
6,400.00	6,384.54	6,346.61	6,271.88	22.94	26.41	177.85	-931.28	-256.56	729.76	683.56	46.20	15.795				
6,500.00	6,484.54	6,445.29	6,369.24	23.27	26.83	178.24	-946.67	-260.99	745.22	698.32	46.90	15.890				
6,600.00	6,584.54	6,543.96	6,466.61	23.61	27.26	178.61	-962.06	-265.42	760.70	713.11	47.59	15.983				
6,709.26	6,693.80	6,651.77	6,572.99	23.98	27.73	179.00	-978.88	-270.26	777.66	729.30	48.36	16.082				
6,750.00	6,734.52	6,691.90	6,612.58	24.11	27.90	89.30	-985.14	-272.06	783.98	735.35	48.63	16.120				
6,800.00	6,784.30	6,740.80	6,660.84	24.27	28.12	89.17	-992.77	-274.26	791.74	742.79	48.96	16.173				
6,850.00	6,833.64	6,789.89	6,709.31	24.42	28.33	89.20	-1,000.42	-275.34	799.52	750.26	49.27	16.229				
6,900.00	6,882.29	6,839.69	6,758.44	24.57	28.53	89.24	-1,008.14	-273.05	807.31	757.74	49.57	16.285				
6,950.00	6,930.03	6,890.18	6,807.98	24.71	28.72	89.27	-1,015.89	-267.21	815.05	765.18	49.87	16.342				
7,000.00	6,976.62	6,941.40	6,857.70	24.85	28.90	89.32	-1,023.63	-257.70	822.72	772.55	50.17	16.397				
7,050.00	7,021.83	6,993.38	6,907.34	24.98	29.06	89.36	-1,031.32	-244.39	830.27	779.79	50.48	16.449				
7,100.00	7,065.44	7,046.15	6,956.64	25.12	29.22	89.40	-1,038.91	-227.19	837.65	786.86	50.78	16.495				
7,150.00	7,107.25	7,099.74	7,005.28	25.26	29.37	89.45	-1,046.36	-206.01	844.82	793.72	51.10	16.533				
7,200.00	7,147.03	7,154.15	7,052.94	25.41	29.51	89.50	-1,053.62	-180.81	851.74	800.30	51.44	16.558				
7,250.00	7,184.61	7,209.41	7,099.27	25.59	29.63	89.55	-1,060.62	-151.54	858.37	806.56	51.81	16.568				
7,300.00	7,219.80	7,265.51	7,143.89	25.79	29.75	89.61	-1,067.32	-118.23	864.65	812.42	52.23	16.555				
7,350.00	7,252.42	7,322.45	7,186.40	26.05	29.85	89.66	-1,073.64	-80.91	870.55	817.84	52.71	16.515				
7,400.00	7,282.33	7,380.20	7,226.41	26.35	29.94	89.71	-1,079.53	-39.69	876.02	822.74	53.28	16.441				
7,450.00	7,309.37	7,438.75	7,263.48	26.72	30.02	89.76	-1,084.91	5.28	881.02	827.06	53.96	16.327				
7,500.00	7,333.40	7,498.03	7,297.20	27.16	30.10	89.81	-1,089.74	53.78	885.51	830.74	54.77	16.168				
7,550.00	7,354.32	7,558.00	7,327.17	27.66	30.18	89.86	-1,093.93	105.53	889.45	833.72	55.73	15.959				
7,600.00	7,372.03	7,618.58	7,353.00	28.24	30.26	89.90	-1,097.45	160.20	892.81	835.94	56.87	15.699				
7,650.00	7,386.43	7,679.69	7,374.35	28.90	30.42	89.94	-1,100.23	217.37	895.57	837.38	58.18	15.392				
7,700.00	7,397.45	7,741.23	7,390.90	29.62	30.76	89.96	-1,102.24	276.59	897.69	838.01	59.67	15.044				
7,750.00	7,405.05	7,803.09	7,402.42	30.41	31.43	89.99	-1,103.44	337.33	899.15	837.82	61.33	14.661				
7,800.00	7,409.18	7,865.16	7,408.73	31.26	32.33	90.00	-1,103.80	399.06	899.96	836.81	63.15	14.251				
7,834.26	7,410.00	7,907.75	7,410.00	31.86	33.03	90.00	-1,103.57	441.62	900.12	835.65	64.46	13.963				
7,900.00	7,410.00	7,973.54	7,410.00	33.09	34.21	90.00	-1,102.90	507.41	900.12	833.21	66.91	13.453				
8,000.00	7,410.00	8,073.54	7,410.00	35.13	36.17	90.00	-1,101.89	607.41	900.12	829.20	70.92	12.692				
8,100.00	7,410.00	8,173.54	7,410.00	37.32	38.30	90.00	-1,100.87	707.40	900.12	824.85	75.26	11.959				
8,200.00	7,410.00	8,273.54	7,410.00	39.66	40.57	90.00	-1,099.85	807.40	900.12	820.23	79.89	11.267				
8,300.00	7,410.00	8,373.54	7,410.00	42.11	42.97	90.00	-1,098.84	907.39	900.12	815.37	84.75	10.621				
8,400.00	7,410.00	8,473.54	7,410.00	44.66	45.46	90.00	-1,097.82	1,007.39	900.12	810.32	89.80	10.024				
8,500.00	7,410.00	8,573.54	7,410.00	47.29	48.04	90.00	-1,096.80	1,107.38	900.12	805.10	95.01	9.474				
8,600.00	7,410.00	8,673.54	7,410.00	49.98	50.69	90.00	-1,095.79	1,207.38	900.12	799.75	100.37	8.968				
8,700.00	7,410.00	8,773.54	7,410.00	52.73	53.40	90.00	-1,094.77	1,307.37	900.12	794.27	105.84	8.504				
8,800.00	7,410.00	8,873.54	7,410.00	55.53	56.16	90.00	-1,093.76	1,407.37	900.12	788.70	111.42	8.079				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3M-25H-M166 - OH - PLAN #1												Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
8,900.00	7,410.00	8,973.54	7,410.00	58.37	58.97	90.00	-1,092.74	1,507.36	900.12	783.04	117.08	7.688	
9,000.00	7,410.00	9,073.54	7,410.00	61.25	61.81	90.00	-1,091.72	1,607.36	900.12	777.31	122.81	7.329	
9,100.00	7,410.00	9,173.54	7,410.00	64.16	64.69	90.00	-1,090.71	1,707.35	900.12	771.51	128.61	6.999	
9,200.00	7,410.00	9,273.54	7,410.00	67.10	67.60	90.00	-1,089.69	1,807.35	900.12	765.66	134.46	6.694	
9,300.00	7,410.00	9,373.54	7,410.00	70.06	70.54	90.00	-1,088.67	1,907.34	900.12	759.75	140.36	6.413	
9,400.00	7,410.00	9,473.54	7,410.00	73.04	73.49	90.00	-1,087.66	2,007.34	900.12	753.81	146.31	6.152	
9,500.00	7,410.00	9,573.54	7,410.00	76.04	76.47	90.00	-1,086.64	2,107.33	900.12	747.82	152.29	5.910	
9,600.00	7,410.00	9,673.54	7,410.00	79.06	79.47	90.00	-1,085.62	2,207.33	900.12	741.81	158.31	5.686	
9,700.00	7,410.00	9,773.54	7,410.00	82.09	82.48	90.00	-1,084.61	2,307.32	900.12	735.76	164.36	5.477	
9,800.00	7,410.00	9,873.54	7,410.00	85.13	85.50	90.00	-1,083.59	2,407.32	900.12	729.69	170.43	5.281	
9,900.00	7,410.00	9,973.54	7,410.00	88.18	88.54	90.00	-1,082.57	2,507.31	900.12	723.59	176.53	5.099	
10,000.00	7,410.00	10,073.54	7,410.00	91.25	91.59	90.00	-1,081.56	2,607.31	900.12	717.47	182.65	4.928	
10,100.00	7,410.00	10,173.54	7,410.00	94.32	94.65	90.00	-1,080.54	2,707.30	900.12	711.33	188.79	4.768	
10,200.00	7,410.00	10,273.54	7,410.00	97.40	97.71	90.00	-1,079.53	2,807.30	900.12	705.17	194.94	4.617	
10,300.00	7,410.00	10,373.54	7,410.00	100.50	100.79	90.00	-1,078.51	2,907.29	900.12	699.00	201.12	4.476	
10,400.00	7,410.00	10,473.54	7,410.00	103.59	103.88	90.00	-1,077.49	3,007.28	900.12	692.81	207.30	4.342	
10,500.00	7,410.00	10,573.54	7,410.00	106.70	106.97	90.00	-1,076.48	3,107.28	900.12	686.61	213.50	4.216	
10,600.00	7,410.00	10,673.54	7,410.00	109.81	110.07	90.00	-1,075.46	3,207.27	900.12	680.40	219.72	4.097	
10,700.00	7,410.00	10,773.54	7,410.00	112.92	113.17	90.00	-1,074.44	3,307.27	900.12	674.18	225.94	3.984	
10,800.00	7,410.00	10,873.54	7,410.00	116.04	116.28	90.00	-1,073.43	3,407.26	900.12	667.94	232.17	3.877	
10,900.00	7,410.00	10,973.54	7,410.00	119.17	119.40	90.00	-1,072.41	3,507.26	900.12	661.70	238.42	3.775	
11,000.00	7,410.00	11,073.54	7,410.00	122.30	122.52	90.00	-1,071.39	3,607.25	900.12	655.45	244.67	3.679	
11,100.00	7,410.00	11,173.54	7,410.00	125.43	125.64	90.00	-1,070.38	3,707.25	900.12	649.19	250.93	3.587	
11,200.00	7,410.00	11,273.54	7,410.00	128.57	128.77	90.00	-1,069.36	3,807.24	900.12	642.92	257.20	3.500	
11,300.00	7,410.00	11,373.54	7,410.00	131.71	131.90	90.00	-1,068.34	3,907.24	900.12	636.64	263.47	3.416	
11,400.00	7,410.00	11,473.54	7,410.00	134.85	135.04	90.00	-1,067.33	4,007.23	900.12	630.36	269.75	3.337	
11,500.00	7,410.00	11,573.54	7,410.00	138.00	138.18	90.00	-1,066.31	4,107.23	900.12	624.07	276.04	3.261	
11,600.00	7,410.00	11,673.54	7,410.00	141.14	141.32	90.00	-1,065.30	4,207.22	900.12	617.78	282.33	3.188	
11,700.00	7,410.00	11,773.54	7,410.00	144.30	144.46	90.00	-1,064.28	4,307.22	900.12	611.48	288.63	3.119	
11,800.00	7,410.00	11,873.54	7,410.00	147.45	147.61	90.00	-1,063.26	4,407.21	900.12	605.18	294.94	3.052	
11,901.48	7,410.00	11,975.02	7,410.00	150.65	150.81	90.00	-1,062.23	4,508.69	900.12	598.78	301.34	2.987	
11,906.34	7,410.00	11,975.04	7,410.00	150.80	150.81	90.00	-1,062.23	4,508.70	900.13	598.61	301.52	2.985 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3N-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
0.00	0.00	0.00	0.00	0.00	0.00	179.83	-49.90	0.15	49.90					
100.00	100.00	100.00	100.00	0.14	0.14	179.83	-49.90	0.15	49.90	49.62	0.28	180.774		
200.00	200.00	200.00	200.00	0.50	0.50	179.83	-49.90	0.15	49.90	48.91	0.99	50.251		
300.00	300.00	300.00	300.00	0.85	0.85	179.83	-49.90	0.15	49.90	48.19	1.71	29.182 CC, ES		
400.00	400.00	398.31	398.29	1.21	1.19	-179.69	-51.53	-0.28	51.56	49.12	2.43	21.186		
500.00	500.00	496.38	496.23	1.57	1.53	-178.41	-56.40	-1.57	56.55	53.37	3.18	17.796		
600.00	600.00	594.00	593.48	1.93	1.87	-176.72	-64.47	-3.70	64.90	60.97	3.93	16.500		
700.00	700.00	690.94	689.72	2.29	2.23	-174.98	-75.65	-6.65	76.63	71.94	4.69	16.341		
800.00	800.00	787.06	784.72	2.65	2.61	-173.40	-89.83	-10.40	91.71	86.28	5.44	16.872		
900.00	899.98	885.85	882.09	2.99	3.01	-45.96	-105.90	-14.64	107.20	101.10	6.10	17.583		
1,000.00	999.84	984.97	979.80	3.33	3.42	-46.52	-122.03	-18.90	120.30	113.54	6.76	17.796		
1,056.01	1,055.67	1,040.59	1,034.63	3.52	3.65	-47.29	-131.08	-21.29	126.61	119.47	7.14	17.734		
1,100.00	1,099.48	1,084.30	1,077.71	3.67	3.84	-48.05	-138.19	-23.17	131.30	123.86	7.44	17.642		
1,200.00	1,199.08	1,183.65	1,175.65	4.03	4.26	-49.59	-154.36	-27.44	142.04	133.90	8.14	17.445		
1,300.00	1,298.69	1,283.01	1,273.59	4.38	4.68	-50.91	-170.52	-31.71	152.87	144.02	8.85	17.269		
1,400.00	1,398.29	1,382.36	1,371.53	4.74	5.11	-52.06	-186.68	-35.98	163.77	154.20	9.57	17.113		
1,500.00	1,497.89	1,481.71	1,469.47	5.11	5.53	-53.06	-202.85	-40.25	174.73	164.43	10.29	16.973		
1,600.00	1,597.49	1,581.07	1,567.40	5.48	5.96	-53.94	-219.01	-44.52	185.73	174.70	11.02	16.847		
1,700.00	1,697.09	1,680.42	1,665.34	5.85	6.39	-54.73	-235.18	-48.79	196.77	185.01	11.76	16.734		
1,800.00	1,796.69	1,779.78	1,763.28	6.22	6.82	-55.43	-251.34	-53.06	207.84	195.34	12.50	16.632		
1,900.00	1,896.29	1,879.13	1,861.22	6.59	7.26	-56.06	-267.51	-57.33	218.94	205.70	13.24	16.539		
2,000.00	1,995.89	1,978.49	1,959.15	6.96	7.69	-56.63	-283.67	-61.60	230.07	216.08	13.98	16.455		
2,100.00	2,095.49	2,077.84	2,057.09	7.34	8.12	-57.15	-299.84	-65.87	241.21	226.48	14.73	16.377		
2,200.00	2,195.09	2,177.20	2,155.03	7.71	8.55	-57.62	-316.00	-70.14	252.37	236.90	15.48	16.307		
2,300.00	2,294.70	2,276.55	2,252.97	8.09	8.99	-58.05	-332.17	-74.41	263.55	247.32	16.23	16.242		
2,400.00	2,394.30	2,375.90	2,350.90	8.47	9.42	-58.45	-348.33	-78.68	274.74	257.76	16.98	16.182		
2,500.00	2,493.90	2,475.26	2,448.84	8.85	9.85	-58.81	-364.50	-82.95	285.95	268.21	17.73	16.126		
2,600.00	2,593.50	2,574.61	2,546.78	9.22	10.29	-59.15	-380.66	-87.21	297.16	278.67	18.49	16.075		
2,700.00	2,693.10	2,673.97	2,644.72	9.60	10.72	-59.46	-396.83	-91.48	308.38	289.14	19.24	16.027		
2,800.00	2,792.70	2,773.32	2,742.66	9.98	11.16	-59.76	-412.99	-95.75	319.62	299.62	20.00	15.983		
2,900.00	2,892.30	2,872.68	2,840.59	10.36	11.59	-60.03	-429.16	-100.02	330.86	310.10	20.75	15.941		
3,000.00	2,991.90	2,972.03	2,938.53	10.74	12.03	-60.28	-445.32	-104.29	342.10	320.59	21.51	15.902		
3,100.00	3,091.50	3,071.39	3,036.47	11.12	12.46	-60.52	-461.49	-108.56	353.35	331.08	22.27	15.866		
3,200.00	3,191.10	3,170.74	3,134.41	11.50	12.90	-60.74	-477.65	-112.83	364.61	341.58	23.03	15.831		
3,300.00	3,290.71	3,270.10	3,232.34	11.88	13.33	-60.95	-493.81	-117.10	375.88	352.09	23.79	15.799		
3,400.00	3,390.31	3,369.45	3,330.28	12.26	13.77	-61.15	-509.98	-121.37	387.14	362.59	24.55	15.769		
3,500.00	3,489.91	3,468.80	3,428.22	12.64	14.20	-61.33	-526.14	-125.64	398.42	373.10	25.31	15.740		
3,600.00	3,589.51	3,568.16	3,526.16	13.03	14.64	-61.51	-542.31	-129.91	409.69	383.62	26.07	15.713		
3,700.00	3,689.11	3,667.51	3,624.10	13.41	15.07	-61.68	-558.47	-134.18	420.97	394.14	26.84	15.687		
3,800.00	3,788.71	3,766.87	3,722.03	13.79	15.51	-61.84	-574.64	-138.45	432.26	404.66	27.60	15.663		
3,900.00	3,888.31	3,866.22	3,819.97	14.17	15.95	-61.98	-590.80	-142.72	443.54	415.18	28.36	15.640		
4,000.00	3,987.91	3,965.58	3,917.91	14.55	16.38	-62.13	-606.97	-146.99	454.83	425.71	29.12	15.618		
4,100.00	4,087.51	4,064.93	4,015.85	14.93	16.82	-62.26	-623.13	-151.26	466.12	436.24	29.89	15.597		
4,200.00	4,187.11	4,164.29	4,113.78	15.32	17.25	-62.39	-639.30	-155.53	477.42	446.77	30.65	15.577		
4,300.00	4,286.71	4,263.64	4,211.72	15.70	17.69	-62.51	-655.46	-159.80	488.71	457.30	31.41	15.558		
4,400.00	4,386.32	4,363.00	4,309.66	16.08	18.12	-62.63	-671.63	-164.07	500.01	467.84	32.18	15.540		
4,500.00	4,485.92	4,462.35	4,407.60	16.46	18.56	-62.74	-687.79	-168.34	511.31	478.37	32.94	15.523		
4,600.00	4,585.52	4,561.70	4,505.53	16.84	19.00	-62.85	-703.96	-172.61	522.62	488.91	33.70	15.506		
4,700.00	4,685.12	4,661.06	4,603.47	17.23	19.43	-62.95	-720.12	-176.88	533.92	499.45	34.47	15.490		
4,759.45	4,744.33	4,720.13	4,661.70	17.45	19.69	-63.01	-729.73	-179.42	540.64	505.72	34.92	15.481		
4,800.00	4,784.74	4,760.40	4,701.40	17.61	19.87	-63.11	-736.28	-181.15	545.36	510.12	35.23	15.479		
4,900.00	4,884.57	4,859.56	4,799.15	17.98	20.30	-63.14	-752.42	-185.41	558.08	522.11	35.97	15.515		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3N-25H-M166 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
5,000.00	4,984.54	4,958.41	4,896.58	18.33	20.74	-62.90	-768.50	-189.66	572.40	535.72	36.68	15.604	
5,015.46	5,000.00	4,973.65	4,911.61	18.38	20.80	170.54	-770.98	-190.31	574.76	537.97	36.79	15.623	
5,100.00	5,084.54	5,056.99	4,993.75	18.65	21.17	171.11	-784.54	-193.89	587.79	550.43	37.36	15.734	
5,200.00	5,184.54	5,155.56	5,090.92	18.98	21.60	171.75	-800.57	-198.13	603.27	565.23	38.04	15.861	
5,300.00	5,284.54	5,254.14	5,188.09	19.30	22.04	172.36	-816.61	-202.36	618.82	580.11	38.71	15.984	
5,400.00	5,384.54	5,352.71	5,285.26	19.63	22.47	172.94	-832.65	-206.60	634.44	595.04	39.40	16.104	
5,500.00	5,484.54	5,451.28	5,382.43	19.95	22.90	173.49	-848.69	-210.84	650.12	610.04	40.08	16.221	
5,600.00	5,584.54	5,549.86	5,479.60	20.28	23.33	174.02	-864.73	-215.07	665.85	625.09	40.76	16.335	
5,700.00	5,684.54	5,648.43	5,576.76	20.61	23.77	174.52	-880.76	-219.31	681.64	640.19	41.45	16.445	
5,800.00	5,784.54	5,747.01	5,673.93	20.94	24.20	174.99	-896.80	-223.54	697.47	655.34	42.14	16.552	
5,900.00	5,884.54	5,845.58	5,771.10	21.27	24.63	175.45	-912.84	-227.78	713.35	670.53	42.83	16.657	
6,000.00	5,984.54	5,944.15	5,868.27	21.60	25.07	175.89	-928.88	-232.02	729.28	685.76	43.52	16.758	
6,100.00	6,084.54	6,042.73	5,965.44	21.94	25.50	176.31	-944.91	-236.25	745.24	701.03	44.21	16.857	
6,200.00	6,184.54	6,141.30	6,062.61	22.27	25.93	176.71	-960.95	-240.49	761.24	716.34	44.90	16.953	
6,300.00	6,284.54	6,239.87	6,159.77	22.60	26.36	177.09	-976.99	-244.73	777.28	731.68	45.60	17.046	
6,400.00	6,384.54	6,338.45	6,256.94	22.94	26.80	177.46	-993.03	-248.96	793.34	747.05	46.29	17.137	
6,500.00	6,484.54	6,437.02	6,354.11	23.27	27.23	177.82	-1,009.06	-253.20	809.44	762.45	46.99	17.226	
6,600.00	6,584.54	6,535.60	6,451.28	23.61	27.66	178.16	-1,025.10	-257.43	825.57	777.88	47.69	17.312	
6,709.26	6,693.80	6,643.30	6,557.45	23.98	28.14	178.51	-1,042.63	-262.06	843.22	794.77	48.45	17.403	
6,750.00	6,734.52	6,683.38	6,596.96	24.11	28.31	88.77	-1,049.15	-263.78	849.79	801.07	48.73	17.439	
6,800.00	6,784.30	6,732.25	6,645.13	24.27	28.53	88.58	-1,057.10	-265.88	857.83	808.77	49.05	17.488	
6,850.00	6,833.64	6,780.53	6,692.71	24.42	28.74	88.60	-1,064.95	-267.96	865.86	816.50	49.36	17.542	
6,900.00	6,882.29	6,827.98	6,739.49	24.57	28.95	88.81	-1,072.67	-270.00	873.97	824.32	49.65	17.602	
6,950.00	6,930.03	6,874.37	6,785.22	24.71	29.15	89.17	-1,080.22	-271.99	882.28	832.35	49.93	17.671	
7,000.00	6,976.62	6,919.49	6,829.70	24.85	29.35	89.66	-1,087.56	-273.93	890.91	840.72	50.20	17.749	
7,050.00	7,021.83	6,967.07	6,876.62	24.98	29.55	90.30	-1,095.30	-275.10	899.96	849.48	50.49	17.826	
7,100.00	7,065.44	7,017.48	6,926.32	25.12	29.76	90.99	-1,103.46	-273.01	909.30	858.50	50.80	17.898	
7,150.00	7,107.25	7,069.89	6,977.69	25.26	29.96	91.68	-1,111.85	-267.09	918.86	867.72	51.14	17.967	
7,200.00	7,147.03	7,124.51	7,030.65	25.41	30.16	92.39	-1,120.46	-256.88	928.58	877.08	51.50	18.030	
7,250.00	7,184.61	7,181.61	7,085.01	25.59	30.34	93.11	-1,129.26	-241.87	938.36	886.48	51.88	18.087	
7,300.00	7,219.80	7,241.44	7,140.53	25.79	30.52	93.83	-1,138.19	-221.49	948.12	895.84	52.28	18.135	
7,350.00	7,252.42	7,304.28	7,196.84	26.05	30.70	94.57	-1,147.19	-195.12	957.74	905.04	52.70	18.172	
7,400.00	7,282.33	7,370.41	7,253.38	26.35	30.86	95.31	-1,156.16	-162.08	967.10	913.94	53.16	18.194	
7,450.00	7,309.37	7,440.06	7,309.43	26.72	31.01	96.05	-1,164.97	-121.74	976.06	922.42	53.65	18.195	
7,500.00	7,333.40	7,513.42	7,364.01	27.16	31.14	96.77	-1,173.46	-73.50	984.47	930.27	54.20	18.163	
7,550.00	7,354.32	7,590.60	7,415.86	27.66	31.27	97.45	-1,181.41	-16.93	992.17	937.31	54.86	18.085	
7,600.00	7,372.03	7,671.58	7,463.49	28.24	31.38	98.09	-1,188.58	48.11	998.98	943.29	55.69	17.938	
7,650.00	7,386.43	7,756.15	7,505.17	28.90	31.49	98.64	-1,194.70	121.38	1,004.75	948.02	56.73	17.711	
7,700.00	7,397.45	7,843.90	7,539.11	29.62	31.64	99.10	-1,199.46	202.10	1,009.30	951.23	58.07	17.380	
7,750.00	7,405.05	7,934.20	7,563.62	30.41	32.00	99.43	-1,202.60	288.90	1,012.51	952.76	59.76	16.944	
7,800.00	7,409.18	8,026.21	7,577.31	31.26	32.92	99.61	-1,203.92	379.81	1,014.27	952.49	61.78	16.417	
7,834.26	7,410.00	8,089.26	7,580.00	31.86	33.84	99.65	-1,203.72	442.78	1,014.61	951.28	63.33	16.020	
7,900.00	7,410.00	8,155.00	7,580.00	33.09	34.97	99.65	-1,203.04	508.52	1,014.61	948.87	65.74	15.434	
8,000.00	7,410.00	8,255.00	7,580.00	35.13	36.87	99.65	-1,202.02	608.51	1,014.60	944.92	69.68	14.561	
8,100.00	7,410.00	8,355.00	7,580.00	37.32	38.95	99.65	-1,200.99	708.51	1,014.59	940.64	73.95	13.720	
8,200.00	7,410.00	8,455.00	7,580.00	39.66	41.18	99.65	-1,199.97	808.50	1,014.58	936.08	78.50	12.925	
8,300.00	7,410.00	8,555.00	7,580.00	42.11	43.54	99.65	-1,198.95	908.50	1,014.57	931.29	83.28	12.183	
8,400.00	7,410.00	8,655.00	7,580.00	44.66	46.00	99.65	-1,197.92	1,008.49	1,014.57	926.31	88.26	11.495	
8,500.00	7,410.00	8,755.00	7,580.00	47.29	48.55	99.65	-1,196.90	1,108.48	1,014.56	921.16	93.40	10.863	
8,600.00	7,410.00	8,855.00	7,580.00	49.98	51.17	99.65	-1,195.87	1,208.48	1,014.55	915.87	98.68	10.281	
8,700.00	7,410.00	8,955.00	7,580.00	52.73	53.86	99.65	-1,194.85	1,308.47	1,014.54	910.47	104.08	9.748	
8,800.00	7,410.00	9,055.00	7,580.00	55.53	56.60	99.65	-1,193.82	1,408.47	1,014.53	904.96	109.57	9.259	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3N-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
8,900.00	7,410.00	9,155.00	7,580.00	58.37	59.39	99.65	-1,192.80	1,508.46	1,014.52	899.37	115.15	8.810		
9,000.00	7,410.00	9,255.00	7,580.00	61.25	62.21	99.65	-1,191.77	1,608.46	1,014.52	893.71	120.81	8.398		
9,100.00	7,410.00	9,355.00	7,580.00	64.16	65.08	99.65	-1,190.75	1,708.45	1,014.51	887.98	126.53	8.018		
9,200.00	7,410.00	9,455.00	7,580.00	67.10	67.97	99.65	-1,189.72	1,808.45	1,014.50	882.20	132.30	7.668		
9,300.00	7,410.00	9,555.00	7,580.00	70.06	70.89	99.65	-1,188.70	1,908.44	1,014.49	876.36	138.13	7.345		
9,400.00	7,410.00	9,655.00	7,580.00	73.04	73.83	99.65	-1,187.67	2,008.44	1,014.48	870.49	144.00	7.045		
9,500.00	7,410.00	9,755.00	7,580.00	76.04	76.79	99.65	-1,186.65	2,108.43	1,014.47	864.58	149.90	6.768		
9,600.00	7,410.00	9,855.00	7,580.00	79.06	79.78	99.65	-1,185.62	2,208.43	1,014.47	858.63	155.84	6.510		
9,700.00	7,410.00	9,955.00	7,580.00	82.09	82.78	99.65	-1,184.60	2,308.42	1,014.46	852.65	161.80	6.270		
9,800.00	7,410.00	10,055.00	7,580.00	85.13	85.79	99.65	-1,183.57	2,408.42	1,014.45	846.65	167.80	6.046		
9,900.00	7,410.00	10,155.00	7,580.00	88.18	88.82	99.65	-1,182.55	2,508.41	1,014.44	840.63	173.82	5.836		
10,000.00	7,410.00	10,255.00	7,580.00	91.25	91.86	99.65	-1,181.52	2,608.41	1,014.43	834.58	179.85	5.640		
10,100.00	7,410.00	10,355.00	7,580.00	94.32	94.91	99.65	-1,180.50	2,708.40	1,014.42	828.51	185.91	5.456		
10,200.00	7,410.00	10,455.00	7,580.00	97.40	97.97	99.65	-1,179.47	2,808.40	1,014.42	822.43	191.99	5.284		
10,300.00	7,410.00	10,555.00	7,580.00	100.50	101.04	99.65	-1,178.45	2,908.39	1,014.41	816.33	198.08	5.121		
10,400.00	7,410.00	10,655.00	7,580.00	103.59	104.12	99.65	-1,177.42	3,008.39	1,014.40	810.21	204.19	4.968		
10,500.00	7,410.00	10,755.00	7,580.00	106.70	107.20	99.65	-1,176.40	3,108.38	1,014.39	804.09	210.30	4.823		
10,600.00	7,410.00	10,855.00	7,580.00	109.81	110.29	99.65	-1,175.37	3,208.37	1,014.38	797.95	216.44	4.687		
10,700.00	7,410.00	10,955.00	7,580.00	112.92	113.39	99.65	-1,174.35	3,308.37	1,014.37	791.80	222.58	4.557		
10,800.00	7,410.00	11,055.00	7,580.00	116.04	116.50	99.65	-1,173.32	3,408.36	1,014.37	785.64	228.73	4.435		
10,900.00	7,410.00	11,155.00	7,580.00	119.17	119.61	99.65	-1,172.30	3,508.36	1,014.36	779.47	234.89	4.318		
11,000.00	7,410.00	11,255.00	7,580.00	122.30	122.72	99.65	-1,171.27	3,608.35	1,014.35	773.29	241.06	4.208		
11,100.00	7,410.00	11,355.00	7,580.00	125.43	125.84	99.65	-1,170.25	3,708.35	1,014.34	767.10	247.24	4.103		
11,200.00	7,410.00	11,455.00	7,580.00	128.57	128.96	99.65	-1,169.22	3,808.34	1,014.33	760.91	253.43	4.002		
11,300.00	7,410.00	11,555.00	7,580.00	131.71	132.09	99.65	-1,168.20	3,908.34	1,014.33	754.70	259.62	3.907		
11,400.00	7,410.00	11,655.00	7,580.00	134.85	135.22	99.65	-1,167.17	4,008.33	1,014.32	748.50	265.82	3.816		
11,500.00	7,410.00	11,755.00	7,580.00	138.00	138.36	99.65	-1,166.15	4,108.33	1,014.31	742.28	272.03	3.729		
11,600.00	7,410.00	11,855.00	7,580.00	141.14	141.50	99.65	-1,165.13	4,208.32	1,014.30	736.06	278.24	3.645		
11,700.00	7,410.00	11,955.00	7,580.00	144.30	144.64	99.65	-1,164.10	4,308.32	1,014.29	729.84	284.45	3.566		
11,800.00	7,410.00	12,055.00	7,580.00	147.45	147.78	99.65	-1,163.08	4,408.31	1,014.28	723.61	290.67	3.489		
11,901.08	7,410.00	12,155.71	7,580.00	150.64	150.95	99.65	-1,162.04	4,509.02	1,014.28	717.32	296.96	3.416		
11,906.34	7,410.00	12,155.71	7,580.00	150.80	150.95	99.65	-1,162.04	4,509.02	1,014.29	717.14	297.15	3.413 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3O-25H-M166 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: O-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis			
0.00	0.00	0.00	0.00	0.00	0.00	-179.96	-60.10	-0.04	60.10					
100.00	100.00	100.00	100.00	0.14	0.14	-179.96	-60.10	-0.04	60.10	59.83	0.28	217.749		
200.00	200.00	200.00	200.00	0.50	0.50	-179.96	-60.10	-0.04	60.10	59.11	0.99	60.529 CC, ES		
300.00	300.00	297.96	297.95	0.85	0.83	-179.59	-61.73	-0.44	61.77	60.04	1.73	35.688		
400.00	400.00	395.70	395.55	1.21	1.18	-178.60	-66.59	-1.63	66.76	64.27	2.50	26.758		
500.00	500.00	492.98	492.47	1.57	1.53	-177.24	-74.64	-3.59	75.11	71.84	3.27	22.987		
600.00	600.00	589.59	588.39	1.93	1.89	-175.79	-85.80	-6.32	86.81	82.77	4.04	21.502		
700.00	700.00	685.32	683.00	2.29	2.27	-174.41	-99.94	-9.77	101.85	97.05	4.80	21.224		
800.00	800.00	782.01	778.11	2.65	2.68	-173.21	-116.90	-13.92	119.74	114.24	5.50	21.755		
900.00	899.98	880.53	874.94	2.99	3.10	-45.95	-134.52	-18.22	136.85	130.69	6.16	22.228		
1,000.00	999.84	979.42	972.14	3.33	3.53	-46.38	-152.21	-22.55	151.57	144.75	6.82	22.214		
1,056.01	1,055.67	1,034.93	1,026.70	3.52	3.77	-46.99	-162.14	-24.97	158.79	151.59	7.20	22.047		
1,100.00	1,099.48	1,078.55	1,069.57	3.67	3.97	-47.62	-169.95	-26.88	164.19	156.68	7.51	21.876		
1,200.00	1,199.08	1,177.72	1,167.04	4.03	4.40	-48.91	-187.68	-31.21	176.53	168.32	8.21	21.514		
1,300.00	1,298.69	1,276.88	1,264.51	4.38	4.84	-50.03	-205.42	-35.55	188.95	180.03	8.92	21.193		
1,400.00	1,398.29	1,376.04	1,361.98	4.74	5.29	-51.01	-223.16	-39.88	201.43	191.79	9.63	20.909		
1,500.00	1,497.89	1,475.20	1,459.44	5.11	5.73	-51.88	-240.90	-44.21	213.96	203.60	10.36	20.655		
1,600.00	1,597.49	1,574.37	1,556.91	5.48	6.17	-52.65	-258.64	-48.55	226.53	215.44	11.09	20.429		
1,700.00	1,697.09	1,673.53	1,654.38	5.85	6.62	-53.34	-276.38	-52.88	239.14	227.31	11.82	20.227		
1,800.00	1,796.69	1,772.69	1,751.84	6.22	7.06	-53.96	-294.12	-57.22	251.78	239.22	12.56	20.044		
1,900.00	1,896.29	1,871.86	1,849.31	6.59	7.51	-54.52	-311.86	-61.55	264.44	251.14	13.30	19.878		
2,000.00	1,995.89	1,971.02	1,946.78	6.96	7.96	-55.03	-329.60	-65.88	277.13	263.09	14.05	19.728		
2,100.00	2,095.49	2,070.18	2,044.24	7.34	8.40	-55.49	-347.34	-70.22	289.84	275.05	14.79	19.592		
2,200.00	2,195.09	2,169.35	2,141.71	7.71	8.85	-55.92	-365.07	-74.55	302.57	287.02	15.54	19.466		
2,300.00	2,294.70	2,268.51	2,239.18	8.09	9.30	-56.31	-382.81	-78.89	315.31	299.01	16.29	19.352		
2,400.00	2,394.30	2,367.67	2,336.65	8.47	9.75	-56.67	-400.55	-83.22	328.06	311.02	17.05	19.246		
2,500.00	2,493.90	2,466.83	2,434.11	8.85	10.19	-57.00	-418.29	-87.55	340.83	323.03	17.80	19.148		
2,600.00	2,593.50	2,566.00	2,531.58	9.22	10.64	-57.31	-436.03	-91.89	353.60	335.05	18.55	19.058		
2,700.00	2,693.10	2,665.16	2,629.05	9.60	11.09	-57.60	-453.77	-96.22	366.39	347.08	19.31	18.974		
2,800.00	2,792.70	2,764.32	2,726.51	9.98	11.54	-57.87	-471.51	-100.56	379.18	359.12	20.07	18.896		
2,900.00	2,892.30	2,863.49	2,823.98	10.36	11.99	-58.12	-489.25	-104.89	391.99	371.16	20.82	18.823		
3,000.00	2,991.90	2,962.65	2,921.45	10.74	12.43	-58.36	-506.99	-109.23	404.80	383.21	21.58	18.755		
3,100.00	3,091.50	3,061.81	3,018.92	11.12	12.88	-58.58	-524.73	-113.56	417.61	395.27	22.34	18.691		
3,200.00	3,191.10	3,160.97	3,116.38	11.50	13.33	-58.79	-542.47	-117.89	430.43	407.33	23.10	18.631		
3,300.00	3,290.71	3,260.14	3,213.85	11.88	13.78	-58.98	-560.20	-122.23	443.26	419.40	23.86	18.575		
3,400.00	3,390.31	3,359.30	3,311.32	12.26	14.23	-59.17	-577.94	-126.56	456.09	431.47	24.62	18.522		
3,500.00	3,489.91	3,458.46	3,408.78	12.64	14.68	-59.34	-595.68	-130.90	468.93	443.54	25.39	18.472		
3,600.00	3,589.51	3,557.63	3,506.25	13.03	15.12	-59.51	-613.42	-135.23	481.77	455.62	26.15	18.425		
3,700.00	3,689.11	3,656.79	3,603.72	13.41	15.57	-59.66	-631.16	-139.56	494.61	467.70	26.91	18.380		
3,800.00	3,788.71	3,755.95	3,701.19	13.79	16.02	-59.81	-648.90	-143.90	507.46	479.78	27.67	18.338		
3,900.00	3,888.31	3,855.12	3,798.65	14.17	16.47	-59.95	-666.64	-148.23	520.31	491.87	28.44	18.298		
4,000.00	3,987.91	3,954.28	3,896.12	14.55	16.92	-60.09	-684.38	-152.57	533.16	503.96	29.20	18.259		
4,100.00	4,087.51	4,053.44	3,993.59	14.93	17.37	-60.22	-702.12	-156.90	546.01	516.05	29.96	18.223		
4,200.00	4,187.11	4,152.60	4,091.05	15.32	17.82	-60.34	-719.86	-161.23	558.87	528.15	30.73	18.188		
4,300.00	4,286.71	4,251.77	4,188.52	15.70	18.27	-60.45	-737.59	-165.57	571.73	540.24	31.49	18.155		
4,400.00	4,386.32	4,350.93	4,285.99	16.08	18.72	-60.57	-755.33	-169.90	584.60	552.34	32.26	18.124		
4,500.00	4,485.92	4,450.09	4,383.45	16.46	19.16	-60.67	-773.07	-174.24	597.46	564.44	33.02	18.094		
4,600.00	4,585.52	4,549.26	4,480.92	16.84	19.61	-60.78	-790.81	-178.57	610.33	576.54	33.79	18.065		
4,700.00	4,685.12	4,648.42	4,578.39	17.23	20.06	-60.87	-808.55	-182.90	623.20	588.65	34.55	18.037		
4,759.45	4,744.33	4,707.37	4,636.33	17.45	20.33	-60.93	-819.10	-185.48	630.85	595.84	35.01	18.021		
4,800.00	4,784.74	4,747.57	4,675.84	17.61	20.51	-61.04	-826.29	-187.24	636.21	600.89	35.31	18.016		
4,900.00	4,884.57	4,846.50	4,773.09	17.98	20.96	-61.14	-843.99	-191.56	650.60	614.54	36.06	18.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 3O-25H-M166 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference				Offset		Semi Major Axis				Distance				Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
5,000.00	4,984.54	4,945.09	4,869.98	18.33	21.41	-61.01	-861.62	-195.87	666.67	629.90	36.77	18.131		
5,015.46	5,000.00	4,960.29	4,884.92	18.38	21.48	172.41	-864.34	-196.53	669.30	632.43	36.88	18.149		
5,100.00	5,084.54	5,043.38	4,966.60	18.65	21.85	172.88	-879.21	-200.17	683.86	646.41	37.45	18.260		
5,200.00	5,184.54	5,141.67	5,063.21	18.98	22.30	173.42	-896.79	-204.46	701.14	663.01	38.13	18.387		
5,300.00	5,284.54	5,239.96	5,159.82	19.30	22.74	173.93	-914.37	-208.76	718.47	679.66	38.82	18.510		
5,400.00	5,384.54	5,338.25	5,256.43	19.63	23.19	174.41	-931.95	-213.05	735.86	696.36	39.50	18.629		
5,500.00	5,484.54	5,436.54	5,353.03	19.95	23.63	174.87	-949.54	-217.35	753.29	713.11	40.19	18.745		
5,600.00	5,584.54	5,534.83	5,449.64	20.28	24.08	175.31	-967.12	-221.65	770.77	729.90	40.87	18.857		
5,700.00	5,684.54	5,633.12	5,546.25	20.61	24.52	175.74	-984.70	-225.94	788.29	746.73	41.56	18.966		
5,800.00	5,784.54	5,731.41	5,642.86	20.94	24.97	176.14	-1,002.29	-230.24	805.86	763.60	42.26	19.071		
5,900.00	5,884.54	5,829.70	5,739.47	21.27	25.41	176.53	-1,019.87	-234.53	823.46	780.51	42.95	19.173		
6,000.00	5,984.54	5,927.99	5,836.08	21.60	25.86	176.90	-1,037.45	-238.83	841.09	797.45	43.64	19.273		
6,100.00	6,084.54	6,026.28	5,932.69	21.94	26.30	177.25	-1,055.03	-243.13	858.76	814.42	44.34	19.369		
6,200.00	6,184.54	6,124.57	6,029.30	22.27	26.75	177.59	-1,072.62	-247.42	876.46	831.42	45.03	19.462		
6,300.00	6,284.54	6,222.86	6,125.91	22.60	27.19	177.92	-1,090.20	-251.72	894.18	848.45	45.73	19.553		
6,400.00	6,384.54	6,321.15	6,222.51	22.94	27.64	178.24	-1,107.78	-256.01	911.94	865.51	46.43	19.641		
6,500.00	6,484.54	6,419.44	6,319.12	23.27	28.09	178.54	-1,125.36	-260.31	929.72	882.59	47.13	19.727		
6,600.00	6,584.54	6,517.73	6,415.73	23.61	28.53	178.83	-1,142.95	-264.61	947.52	899.69	47.83	19.810		
6,709.26	6,693.80	6,625.12	6,521.29	23.98	29.02	179.14	-1,162.16	-269.30	967.00	918.40	48.60	19.898		
6,750.00	6,734.52	6,665.09	6,560.57	24.11	29.20	89.31	-1,169.31	-271.05	974.26	925.39	48.88	19.933		
6,800.00	6,784.30	6,713.85	6,608.50	24.27	29.42	88.98	-1,178.03	-273.16	983.17	933.97	49.20	19.983		
6,850.00	6,833.64	6,763.01	6,656.85	24.42	29.63	88.74	-1,186.81	-273.25	992.06	942.54	49.52	20.035		
6,900.00	6,882.29	6,812.75	6,705.69	24.57	29.84	88.51	-1,195.64	-269.92	1,000.89	951.06	49.83	20.087		
6,950.00	6,930.03	6,863.12	6,754.78	24.71	30.04	88.28	-1,204.49	-263.04	1,009.63	959.50	50.13	20.139		
7,000.00	6,976.62	6,914.15	6,803.91	24.85	30.22	88.06	-1,213.30	-252.52	1,018.23	967.80	50.43	20.189		
7,050.00	7,021.83	6,965.86	6,852.83	24.98	30.39	87.85	-1,222.03	-238.25	1,026.64	975.91	50.74	20.235		
7,100.00	7,065.44	7,018.28	6,901.27	25.12	30.56	87.66	-1,230.64	-220.18	1,034.83	983.79	51.05	20.273		
7,150.00	7,107.25	7,071.43	6,948.92	25.26	30.71	87.48	-1,239.07	-198.22	1,042.74	991.38	51.37	20.300		
7,200.00	7,147.03	7,125.34	6,995.49	25.41	30.85	87.31	-1,247.26	-172.35	1,050.34	998.63	51.71	20.311		
7,250.00	7,184.61	7,180.00	7,040.63	25.59	30.98	87.16	-1,255.16	-142.57	1,057.57	1,005.48	52.09	20.302		
7,300.00	7,219.80	7,235.43	7,083.98	25.79	31.10	87.02	-1,262.68	-108.89	1,064.40	1,011.87	52.52	20.265		
7,350.00	7,252.42	7,291.61	7,125.18	26.05	31.21	86.89	-1,269.78	-71.38	1,070.78	1,017.75	53.02	20.195		
7,400.00	7,282.33	7,348.52	7,163.85	26.35	31.30	86.78	-1,276.38	-30.17	1,076.67	1,023.06	53.61	20.083		
7,450.00	7,309.37	7,406.14	7,199.59	26.72	31.39	86.68	-1,282.42	14.60	1,082.03	1,027.72	54.31	19.922		
7,500.00	7,333.40	7,464.42	7,232.04	27.16	31.48	86.60	-1,287.82	62.69	1,086.83	1,031.68	55.15	19.707		
7,550.00	7,354.32	7,523.31	7,260.81	27.66	31.56	86.53	-1,292.52	113.84	1,091.03	1,034.90	56.13	19.437		
7,600.00	7,372.03	7,582.75	7,285.56	28.24	31.66	86.47	-1,296.47	167.72	1,094.60	1,037.32	57.28	19.109		
7,650.00	7,386.43	7,642.66	7,305.98	28.90	31.79	86.43	-1,299.60	223.93	1,097.52	1,038.92	58.60	18.730		
7,700.00	7,397.45	7,702.95	7,321.79	29.62	32.01	86.40	-1,301.88	282.05	1,099.77	1,039.68	60.09	18.303		
7,750.00	7,405.05	7,763.52	7,332.78	30.41	32.40	86.37	-1,303.27	341.58	1,101.32	1,039.57	61.74	17.837		
7,800.00	7,409.18	7,824.28	7,338.80	31.26	33.04	86.36	-1,303.75	402.02	1,102.16	1,038.62	63.54	17.347		
7,834.26	7,410.00	7,865.97	7,340.00	31.86	33.61	86.36	-1,303.55	443.69	1,102.33	1,037.50	64.83	17.003		
7,900.00	7,410.00	7,931.73	7,340.00	33.09	34.69	86.36	-1,302.88	509.45	1,102.33	1,035.06	67.27	16.388		
8,000.00	7,410.00	8,031.73	7,340.00	35.13	36.55	86.36	-1,301.86	609.44	1,102.33	1,031.07	71.26	15.470		
8,100.00	7,410.00	8,131.73	7,340.00	37.32	38.63	86.36	-1,300.85	709.44	1,102.33	1,026.75	75.58	14.585		
8,200.00	7,410.00	8,231.73	7,340.00	39.66	40.87	86.36	-1,299.83	809.43	1,102.33	1,022.15	80.18	13.748		
8,300.00	7,410.00	8,331.73	7,340.00	42.11	43.24	86.36	-1,298.81	909.43	1,102.33	1,017.31	85.01	12.966		
8,400.00	7,410.00	8,431.73	7,340.00	44.66	45.72	86.36	-1,297.80	1,009.42	1,102.33	1,012.28	90.04	12.242		
8,500.00	7,410.00	8,531.73	7,340.00	47.29	48.28	86.36	-1,296.78	1,109.42	1,102.33	1,007.09	95.24	11.574		
8,600.00	7,410.00	8,631.73	7,340.00	49.98	50.91	86.36	-1,295.76	1,209.41	1,102.33	1,001.76	100.57	10.961		
8,700.00	7,410.00	8,731.73	7,340.00	52.73	53.61	86.36	-1,294.75	1,309.41	1,102.33	996.31	106.02	10.397		
8,800.00	7,410.00	8,831.73	7,340.00	55.53	56.36	86.36	-1,293.73	1,409.40	1,102.33	990.75	111.58	9.880		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - SAM 30-25H-M166 - OH - PLAN #1												Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+HDGM												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
8,900.00	7,410.00	8,931.73	7,340.00	58.37	59.16	86.36	-1,292.71	1,509.40	1,102.33	985.11	117.21	9.404	
9,000.00	7,410.00	9,031.73	7,340.00	61.25	61.99	86.36	-1,291.70	1,609.39	1,102.33	979.40	122.93	8.967	
9,100.00	7,410.00	9,131.73	7,340.00	64.16	64.86	86.36	-1,290.68	1,709.39	1,102.33	973.62	128.71	8.565	
9,200.00	7,410.00	9,231.73	7,340.00	67.10	67.76	86.36	-1,289.67	1,809.38	1,102.33	967.79	134.54	8.193	
9,300.00	7,410.00	9,331.73	7,340.00	70.06	70.69	86.36	-1,288.65	1,909.37	1,102.33	961.90	140.42	7.850	
9,400.00	7,410.00	9,431.73	7,340.00	73.04	73.64	86.36	-1,287.63	2,009.37	1,102.33	955.98	146.35	7.532	
9,500.00	7,410.00	9,531.73	7,340.00	76.04	76.61	86.36	-1,286.62	2,109.36	1,102.33	950.01	152.32	7.237	
9,600.00	7,410.00	9,631.73	7,340.00	79.06	79.60	86.36	-1,285.60	2,209.36	1,102.33	944.01	158.32	6.963	
9,700.00	7,410.00	9,731.73	7,340.00	82.09	82.61	86.36	-1,284.58	2,309.35	1,102.33	937.98	164.35	6.707	
9,800.00	7,410.00	9,831.73	7,340.00	85.13	85.63	86.36	-1,283.57	2,409.35	1,102.33	931.93	170.40	6.469	
9,900.00	7,410.00	9,931.73	7,340.00	88.18	88.66	86.36	-1,282.55	2,509.34	1,102.33	925.84	176.48	6.246	
10,000.00	7,410.00	10,031.73	7,340.00	91.25	91.71	86.36	-1,281.53	2,609.34	1,102.33	919.74	182.59	6.037	
10,100.00	7,410.00	10,131.73	7,340.00	94.32	94.76	86.36	-1,280.52	2,709.33	1,102.33	913.62	188.71	5.841	
10,200.00	7,410.00	10,231.73	7,340.00	97.40	97.83	86.36	-1,279.50	2,809.33	1,102.33	907.48	194.85	5.657	
10,300.00	7,410.00	10,331.73	7,340.00	100.50	100.90	86.36	-1,278.48	2,909.32	1,102.33	901.32	201.01	5.484	
10,400.00	7,410.00	10,431.73	7,340.00	103.59	103.98	86.36	-1,277.47	3,009.32	1,102.33	895.15	207.18	5.321	
10,500.00	7,410.00	10,531.73	7,340.00	106.70	107.07	86.36	-1,276.45	3,109.31	1,102.33	888.97	213.36	5.166	
10,600.00	7,410.00	10,631.73	7,340.00	109.81	110.17	86.36	-1,275.44	3,209.31	1,102.33	882.77	219.56	5.021	
10,700.00	7,410.00	10,731.73	7,340.00	112.92	113.27	86.36	-1,274.42	3,309.30	1,102.33	876.56	225.77	4.883	
10,800.00	7,410.00	10,831.73	7,340.00	116.04	116.37	86.36	-1,273.40	3,409.30	1,102.33	870.34	231.99	4.752	
10,900.00	7,410.00	10,931.73	7,340.00	119.17	119.49	86.36	-1,272.39	3,509.29	1,102.33	864.11	238.21	4.627	
11,000.00	7,410.00	11,031.73	7,340.00	122.30	122.60	86.36	-1,271.37	3,609.29	1,102.33	857.88	244.45	4.509	
11,100.00	7,410.00	11,131.73	7,340.00	125.43	125.73	86.36	-1,270.35	3,709.28	1,102.33	851.63	250.70	4.397	
11,200.00	7,410.00	11,231.73	7,340.00	128.57	128.85	86.36	-1,269.34	3,809.28	1,102.33	845.38	256.95	4.290	
11,300.00	7,410.00	11,331.73	7,340.00	131.71	131.98	86.36	-1,268.32	3,909.27	1,102.33	839.12	263.21	4.188	
11,400.00	7,410.00	11,431.73	7,340.00	134.85	135.12	86.36	-1,267.30	4,009.27	1,102.33	832.85	269.48	4.091	
11,500.00	7,410.00	11,531.73	7,340.00	138.00	138.25	86.36	-1,266.29	4,109.26	1,102.33	826.58	275.75	3.998	
11,600.00	7,410.00	11,631.73	7,340.00	141.14	141.39	86.36	-1,265.27	4,209.26	1,102.33	820.30	282.03	3.909	
11,700.00	7,410.00	11,731.73	7,340.00	144.30	144.54	86.36	-1,264.25	4,309.25	1,102.33	814.02	288.31	3.823	
11,800.00	7,410.00	11,831.73	7,340.00	147.45	147.68	86.36	-1,263.24	4,409.25	1,102.33	807.73	294.60	3.742	
11,895.43	7,410.00	11,927.17	7,340.00	150.46	150.69	86.36	-1,262.27	4,504.67	1,102.33	801.72	300.61	3.667	
11,906.34	7,410.00	11,932.12	7,340.00	150.80	150.84	86.36	-1,262.22	4,509.62	1,102.34	801.20	301.14	3.661 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S25-T1N-R66W (SAM) - Wenzel 1 (EXISTING) - CPR WELL - NO SURVEYS													Offset Site Error: 0.00 usft
Survey Program: 8120-ISCWSA MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
10,000.00	7,410.00	7,331.00	7,331.00	91.25	8.23	-90.00	56.20	4,047.14	1,468.35	1,430.78	37.56	39.090	
10,100.00	7,410.00	7,331.00	7,331.00	94.32	8.23	-90.00	56.20	4,047.14	1,369.59	1,331.28	38.31	35.747	
10,200.00	7,410.00	7,331.00	7,331.00	97.40	8.23	-90.00	56.20	4,047.14	1,271.03	1,231.79	39.24	32.391	
10,300.00	7,410.00	7,331.00	7,331.00	100.50	8.23	-90.00	56.20	4,047.14	1,172.71	1,132.31	40.40	29.028	
10,400.00	7,410.00	7,331.00	7,331.00	103.59	8.23	-90.00	56.20	4,047.14	1,074.70	1,032.84	41.86	25.672	
10,500.00	7,410.00	7,331.00	7,331.00	106.70	8.23	-90.00	56.20	4,047.14	977.10	933.36	43.73	22.342	
10,600.00	7,410.00	7,331.00	7,331.00	109.81	8.23	-90.00	56.20	4,047.14	880.03	833.87	46.16	19.064	
10,700.00	7,410.00	7,331.00	7,331.00	112.92	8.23	-90.00	56.20	4,047.14	783.70	734.34	49.36	15.878	
10,800.00	7,410.00	7,331.00	7,331.00	116.04	8.23	-90.00	56.20	4,047.14	688.42	634.78	53.65	12.832	
10,900.00	7,410.00	7,331.00	7,331.00	119.17	8.23	-90.00	56.20	4,047.14	594.69	535.18	59.52	9.992	
11,000.00	7,410.00	7,331.00	7,331.00	122.30	8.23	-90.00	56.20	4,047.14	503.39	435.66	67.73	7.433	
11,100.00	7,410.00	7,331.00	7,331.00	125.43	8.23	-90.00	56.20	4,047.14	416.09	336.65	79.44	5.238	
11,200.00	7,410.00	7,331.00	7,331.00	128.57	8.23	-90.00	56.20	4,047.14	335.96	239.77	96.19	3.493	
11,300.00	7,410.00	7,331.00	7,331.00	131.71	8.23	-90.00	56.20	4,047.14	269.45	150.93	118.52	2.274	
11,400.00	7,410.00	7,331.00	7,331.00	134.85	8.23	-90.00	56.20	4,047.14	228.78	88.88	139.90	1.635	
11,451.32	7,410.00	7,331.00	7,331.00	136.46	8.23	-90.00	56.20	4,047.14	222.95	78.26	144.69	1.541 CC, ES, SF	
11,500.00	7,410.00	7,331.00	7,331.00	138.00	8.23	-90.00	56.20	4,047.14	228.20	85.16	143.04	1.595	
11,600.00	7,410.00	7,331.00	7,331.00	141.14	8.23	-90.00	56.20	4,047.14	267.98	141.73	126.25	2.123	
11,700.00	7,410.00	7,331.00	7,331.00	144.30	8.23	-90.00	56.20	4,047.14	333.99	227.87	106.12	3.147	
11,800.00	7,410.00	7,331.00	7,331.00	147.45	8.23	-90.00	56.20	4,047.14	413.86	323.60	90.26	4.585	
11,906.34	7,410.00	7,331.00	7,331.00	150.80	8.23	-90.00	56.20	4,047.14	506.71	428.46	78.24	6.476	

# Cathedral Energy Services

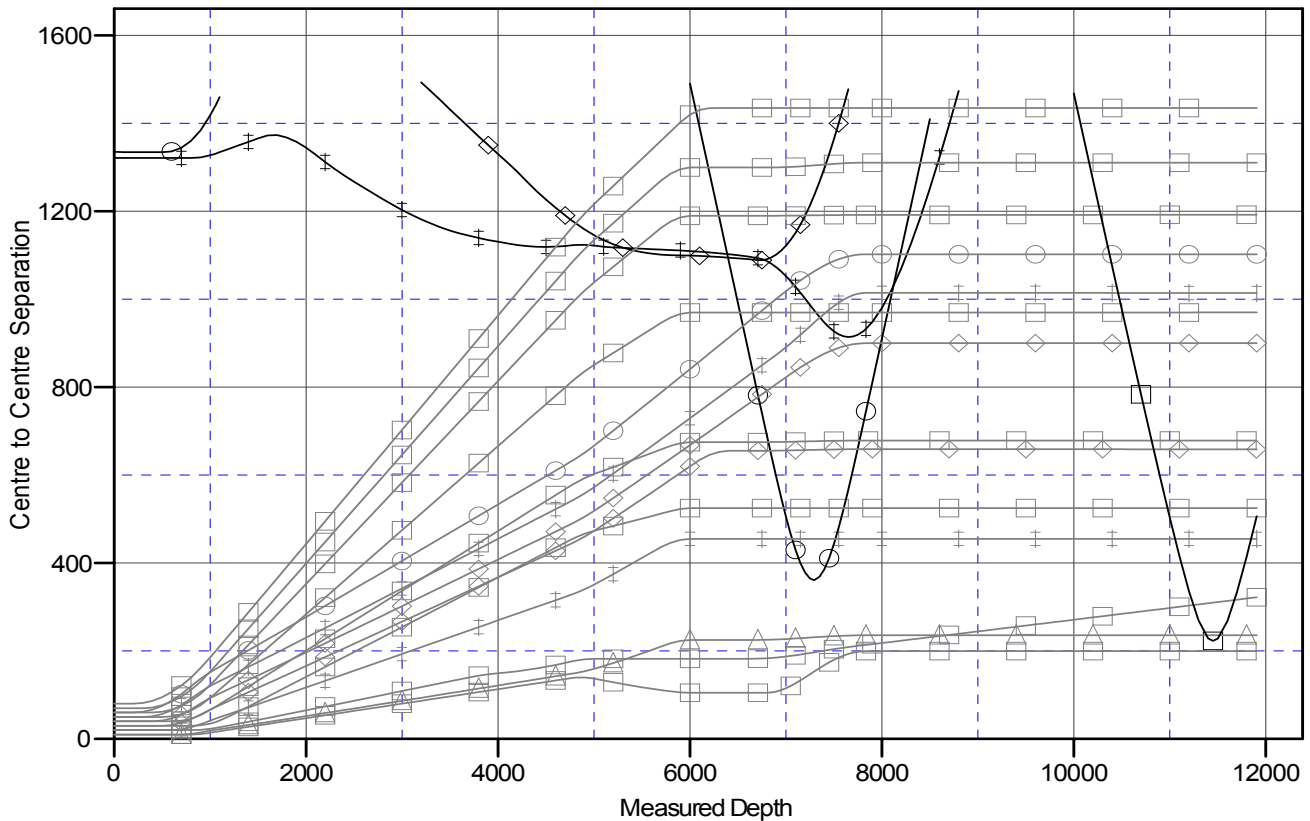
## Anticollision Report

<b>Company:</b>	Crestone Peak Resources	<b>Local Co-ordinate Reference:</b>	Well SAM 3I-25H-M166
<b>Project:</b>	DJ BASIN	<b>TVD Reference:</b>	23' KB @ 5109.00usft
<b>Reference Site:</b>	S25-T1N-R66W (SAM)	<b>MD Reference:</b>	23' KB @ 5109.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SAM 3I-25H-M166	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to 23' KB @ 5109.00usft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: SAM 3I-25H-M166  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.50°

### Ladder Plot



### LEGEND

NG), CPRWELL, SURVEYS V0	SAM3B-25H-M166, OH, PLAN#1 V0	SAM3J-25H-M166, OH, PLAN#1 V0
HN, GWOG WELL, GWOG WELL V0	SAM3C-25H-M166, OH, PLAN#1 V0	SAM3K-25H-M166, OH, PLAN#1 V0
D165 (EXISTING), CPRWELL, SURVEYS V0	SAM3D-25H-M166, OH, PLAN#1 V0	SAM3L-25H-M166, OH, PLAN#1 V0
D165 (EXISTING), CPRWELL, SURVEYS V0	SAM3E-25H-M166, OH, PLAN#1 V0	SAM3M-25H-M166, OH, PLAN#1 V0
3), CPRWELL, NO SURVEYS V0	SAM3F-25H-M166, OH, PLAN#1 V0	SAM3N-25H-M166, OH, PLAN#1 V0
TING), CPRWELL, SURVEYS V0	SAM3G-25H-M166, OH, PLAN#1 V0	SAM3O-25H-M166, OH, PLAN#1 V0
36, OH, PLAN#1 V0	SAM3H-25H-M166, OH, PLAN#1 V0	Wenzel 1 (EXISTING), CPRWELL, NO S